

PM 6665 Timer/counter

PM 6669 Frequency counter

## Service Manual

9499 465 00711

87 06 01 First edition



**Industrial &  
Electro-acoustic Systems**

**PHILIPS**

**Important**

As the instrument is an electrical apparatus, it may be operated only by trained personnel. Maintenance and repairs may also be carried out only by qualified personnel.

**Please note**

In correspondence concerning this instrument, please quote the type number and serial number as given on the type plate.



The counter is marked with this symbol when it is necessary for the user to refer to the manual.

# Contents

## 1. Safety instructions . . . . . 2

## 2. Drawings and diagrams

### PM 6665

Basic board,	
Component layout.	4
Input amplifier diagram.	5
Power supply and Logic unit	7
Front panel	
Component layout.	8
Circuit diagram	9

### PM 6669

Basic board,	
Component layout.	10
Input amplifier diagram.	11
Logic unit.	13
Power supply	15
Front panel	
Component layout.	16
Circuit diagram	17

### Options

/1. oscillator (uncompensated-crystal)	
Component layout.	18
Circuit diagram	19
PM 9604, GPIB interface	
Component layout.	20
Circuit diagram	21
PM 9605, Battery unit	
Component layout.	22
Circuit diagram	23
PM 9608, 1.1 GHz HF input	
Component layout.	24
Circuit diagram	25

## 3. Spare parts list

Mechanical parts	28
PM 6665 Basic board	29
Front panel	32
PM 6669 Basic board	33
Front panel	35

### Options

/1. oscillator (uncompensated-crystal)	36
/3. oscillator (MTCXO)	36
PM 9604 GPIB-interface	37
PM 9605 Battery unit	No spare parts available yet
PM 9606 Rack-mount kit	No spare parts
PM 9607	36
PM 9608 1.1 GHz HF-input	39



## **1. Safety instructions**

## **GENERAL INFORMATION**

---

**WARNING:** These servicing instructions are for use by qualified personnel only. To reduce the risk of electrical shock, do not perform any servicing other than that specified in the Operating Manual unless you are fully qualified to do so.

This counter has been designed and tested in accordance with IEC Publication 348, Safety Requirements For Electronic Measuring Apparatus For Class 1 instruments, and has been supplied in a safe condition. This manual contains information and warnings that should be followed by the user and service technician to ensure safe operation and repair in order to keep the counter in a safe condition.

**WARNING:** The opening of covers or removal of parts, except those to which access can be gained by hand, is likely to expose live parts and accessible terminals which can be dangerous to life.

The counter must be disconnected from all voltage sources before it is opened.

Remember that capacitors inside the counter retain their charge even if the counter has been disconnected from all voltage sources.

## **GROUNDING**

---

The counter is connected to ground via a sealed three-core power cable, which must be plugged into a socket outlet with a protective ground contact. No other method of grounding is permitted for this counter. When the counter is brought from a cold to a warm environment, condensation may cause a hazardous condition. Therefore, ensure that the grounding requirements are strictly met.

Power extension cables must always have a protective ground conductor.

**WARNING:** Any interruption of the protective ground conductor inside or outside the counter, or disconnection of the protective ground terminal, is likely to make the counter dangerous. DO NOT intentionally disrupt the protective grounding.

## **LINE VOLTAGE SETTING**

---

Before connecting the counter to the line, ensure that it is set to the local line voltage. On delivery the counter is set to either 115 V or 220 V, as indicated on the line voltage selector on the rear panel. If the voltage setting is incorrect, set the line voltage selector in accordance with the local voltage before connecting the counter to the line.

## **SPARE PARTS**

---

Components that are important for the safety of the instrument may only be renewed by components obtained from your local Philips organisation.

## **FUSES**

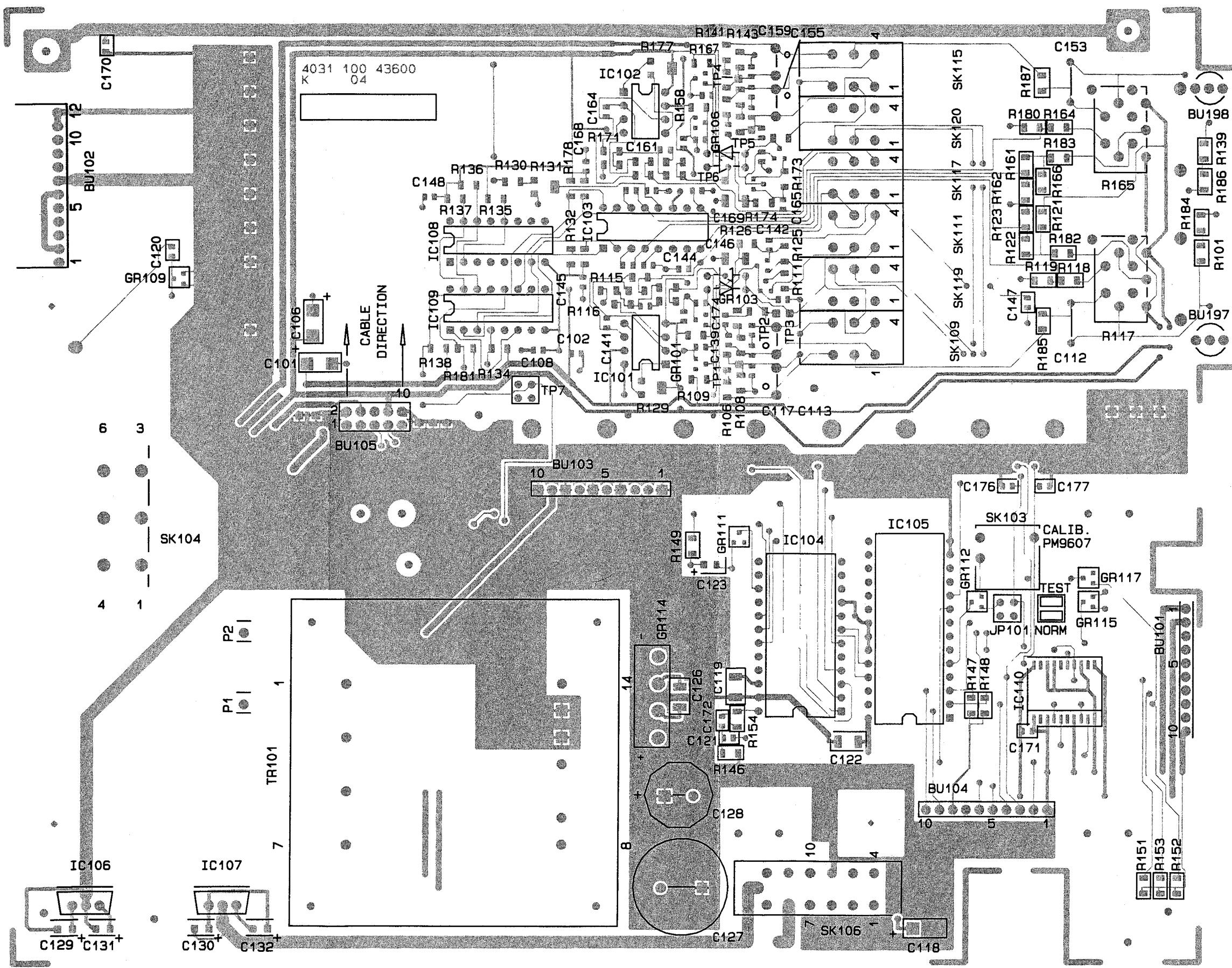
---

The counter is protected by one fuse inside the transformer. This fuse will blow if the transformer is dangerously overheated. The fuse cannot be replaced separately.

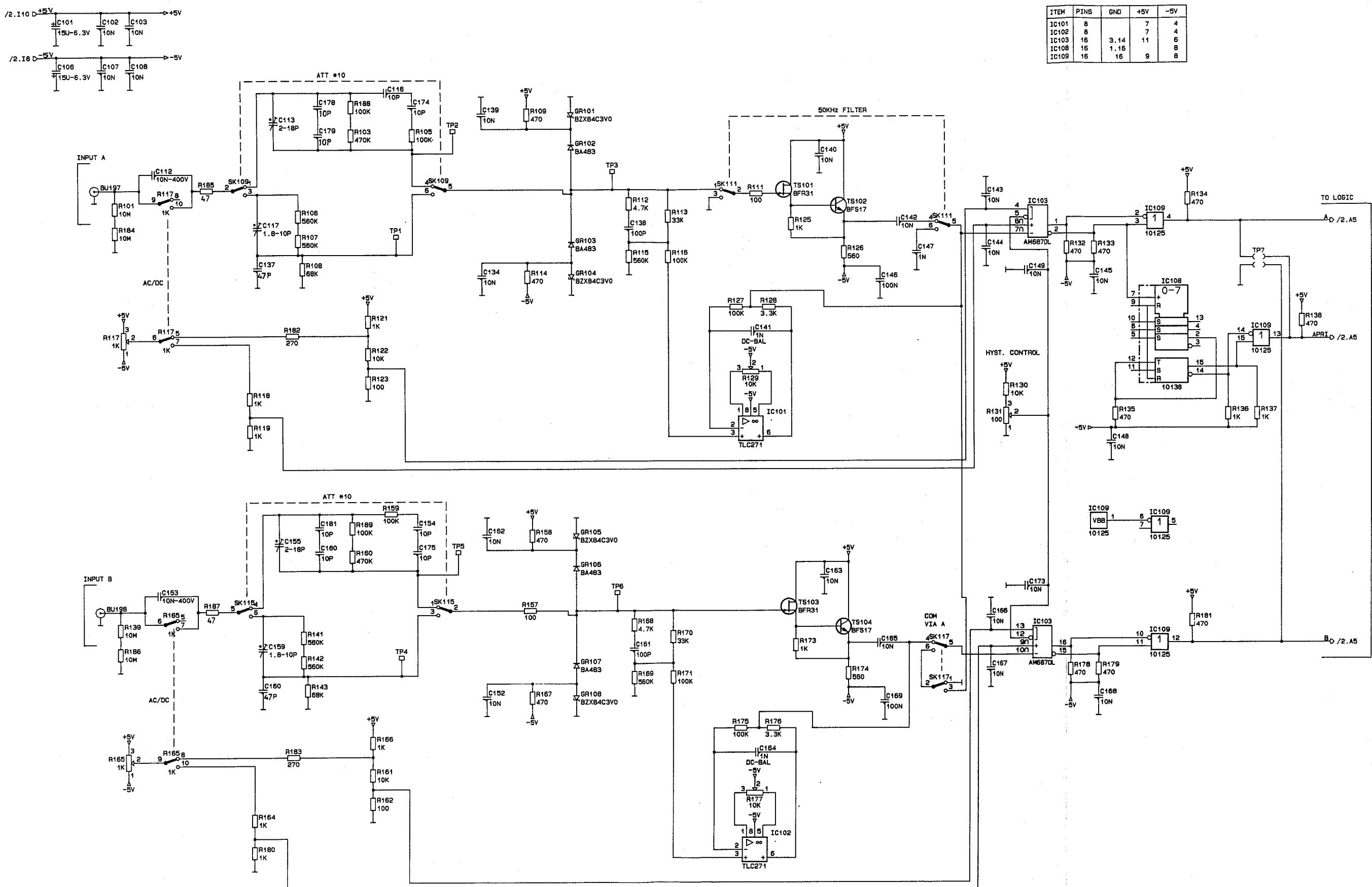
Always replace the complete transformer to ensure that the counter remains safe!

## 2. Drawings and diagrams

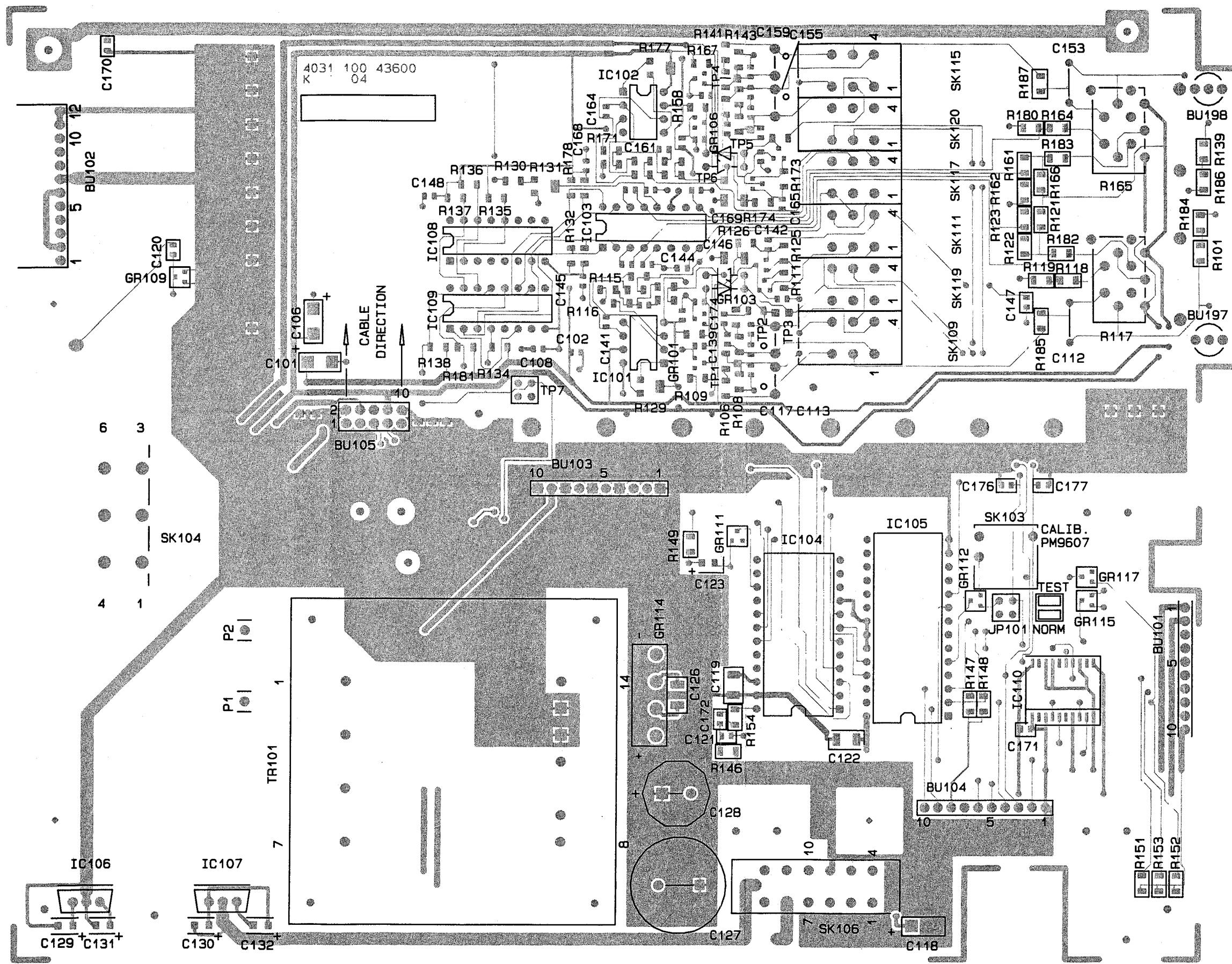
## PM 6665 Basic board



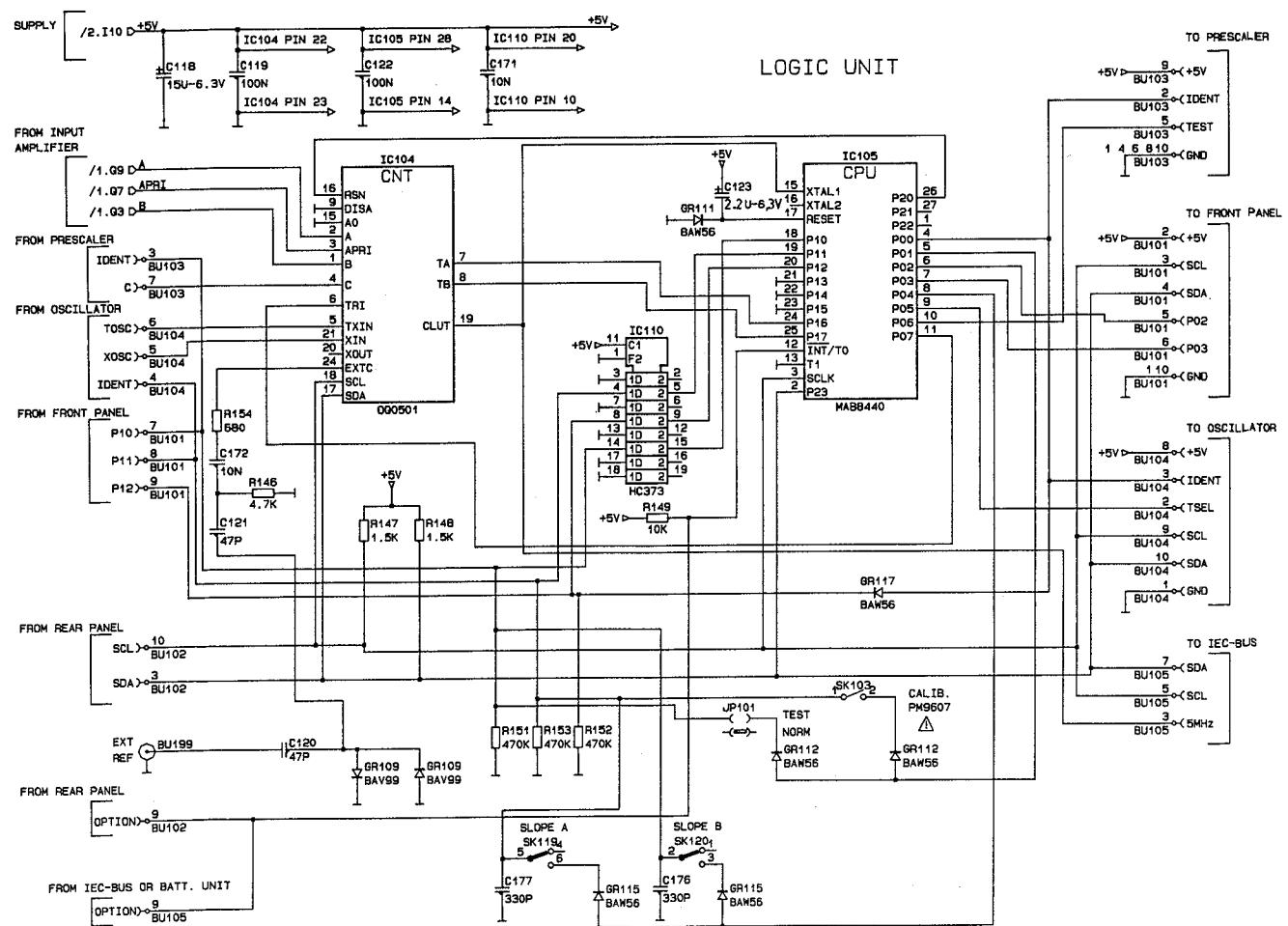
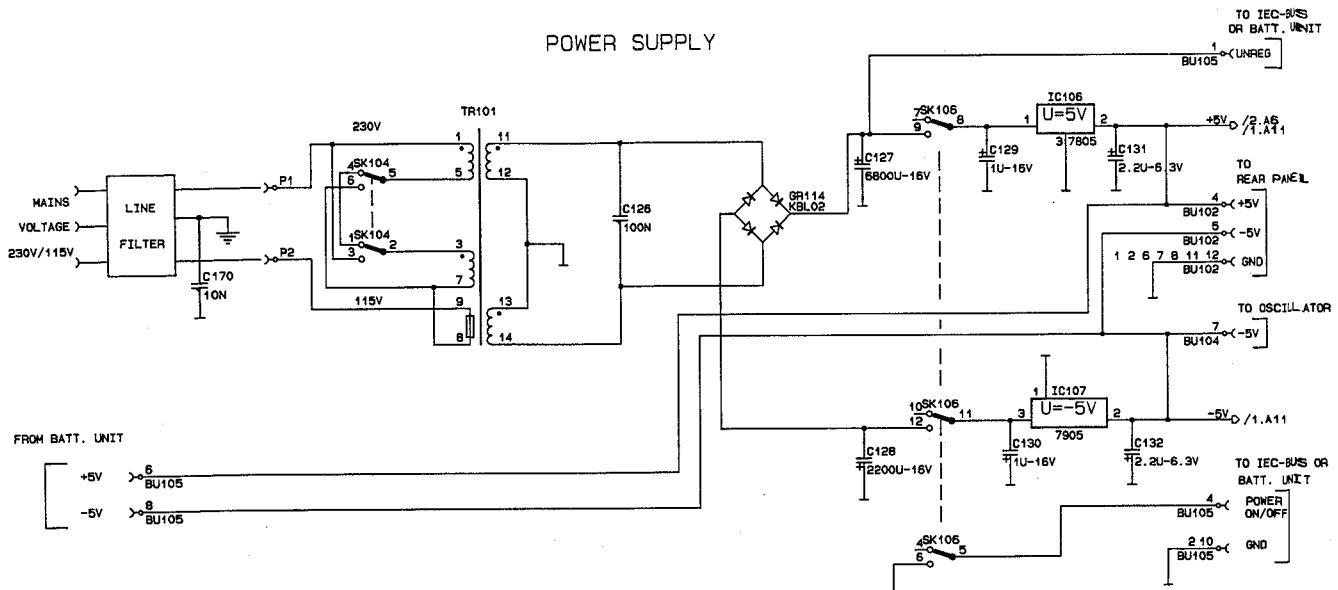
## PM 6665 Basic board, input amplifier

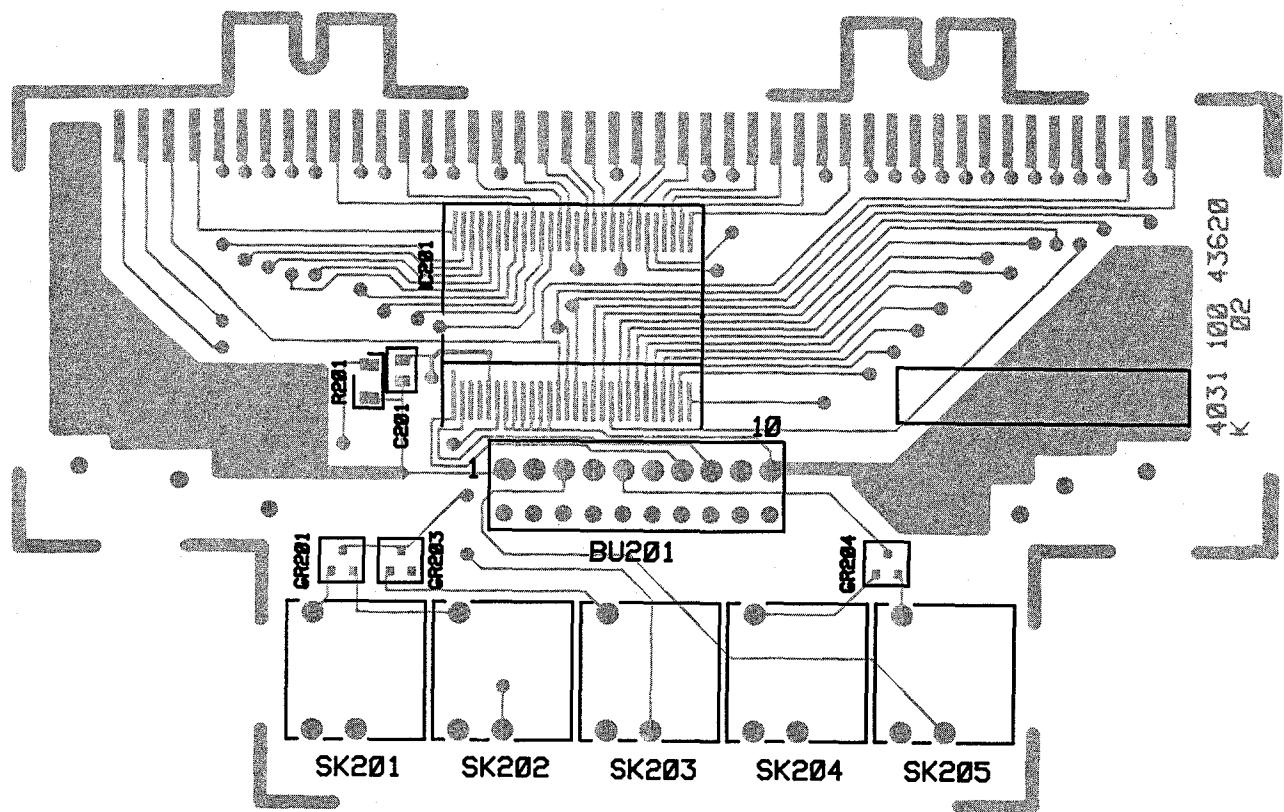


## PM 6665 Basic board

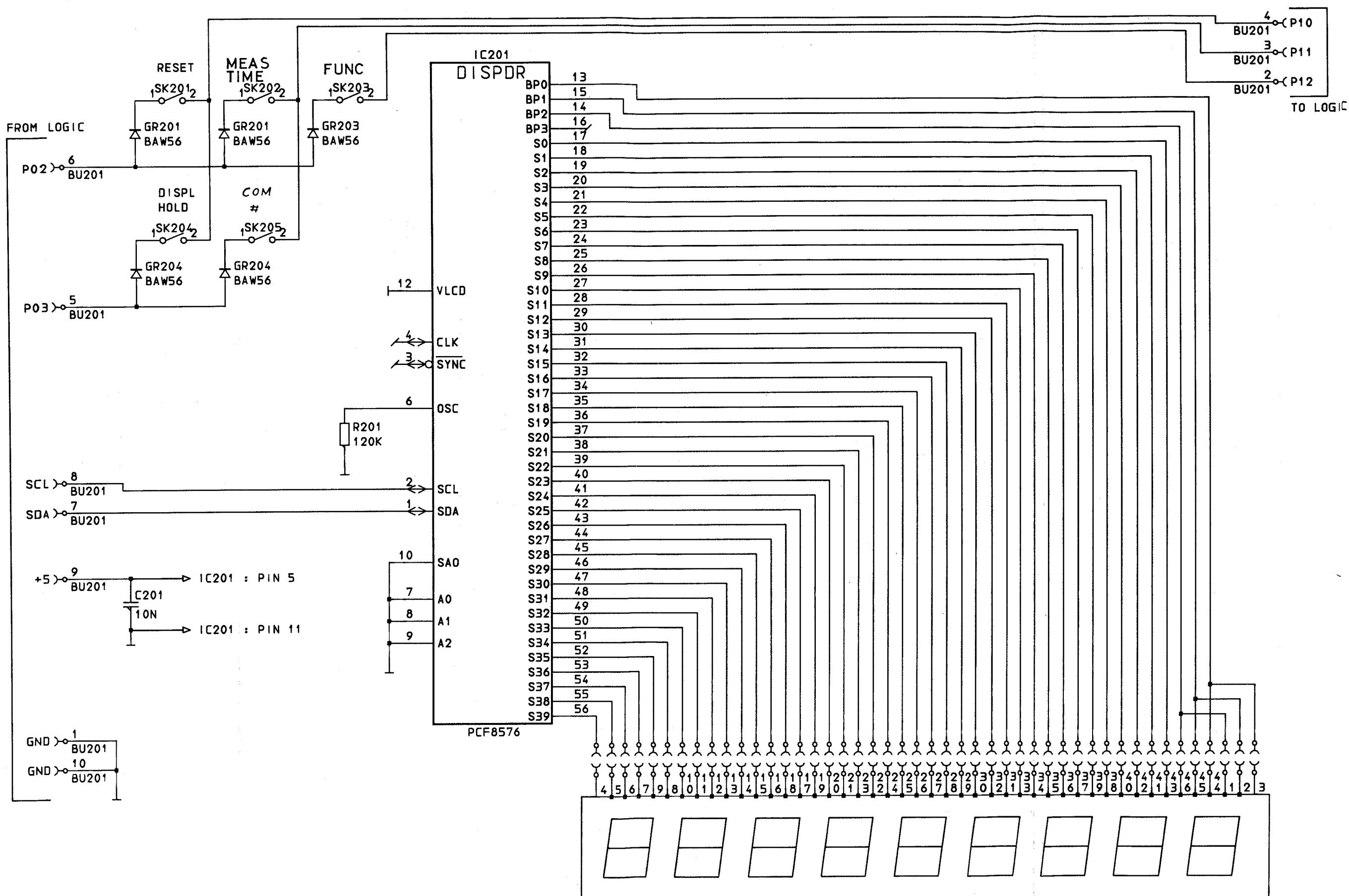


# PM 6665 Basic board, power supply and logic unit



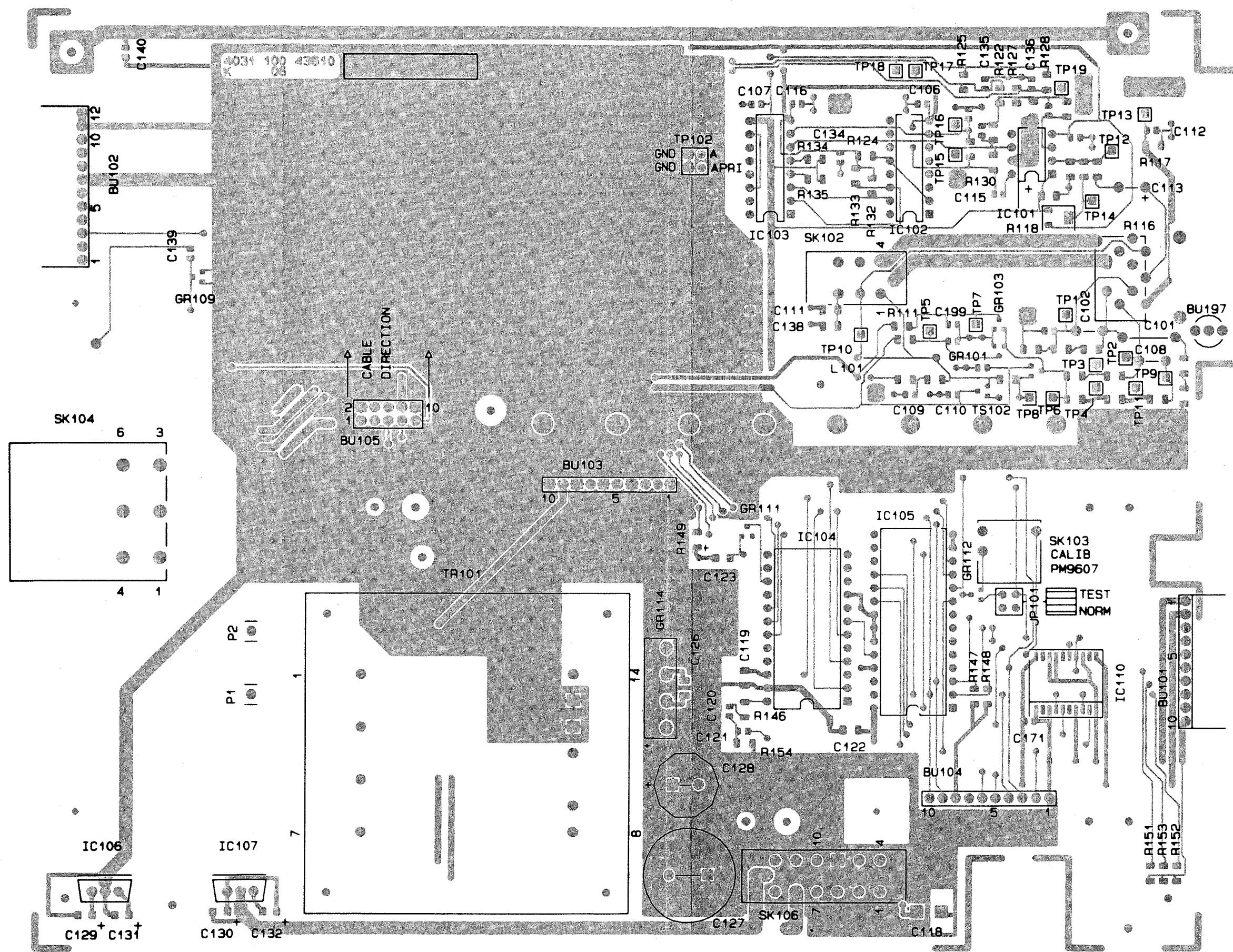
**PM 6665 Front panel**

## PM 6665 Front panel

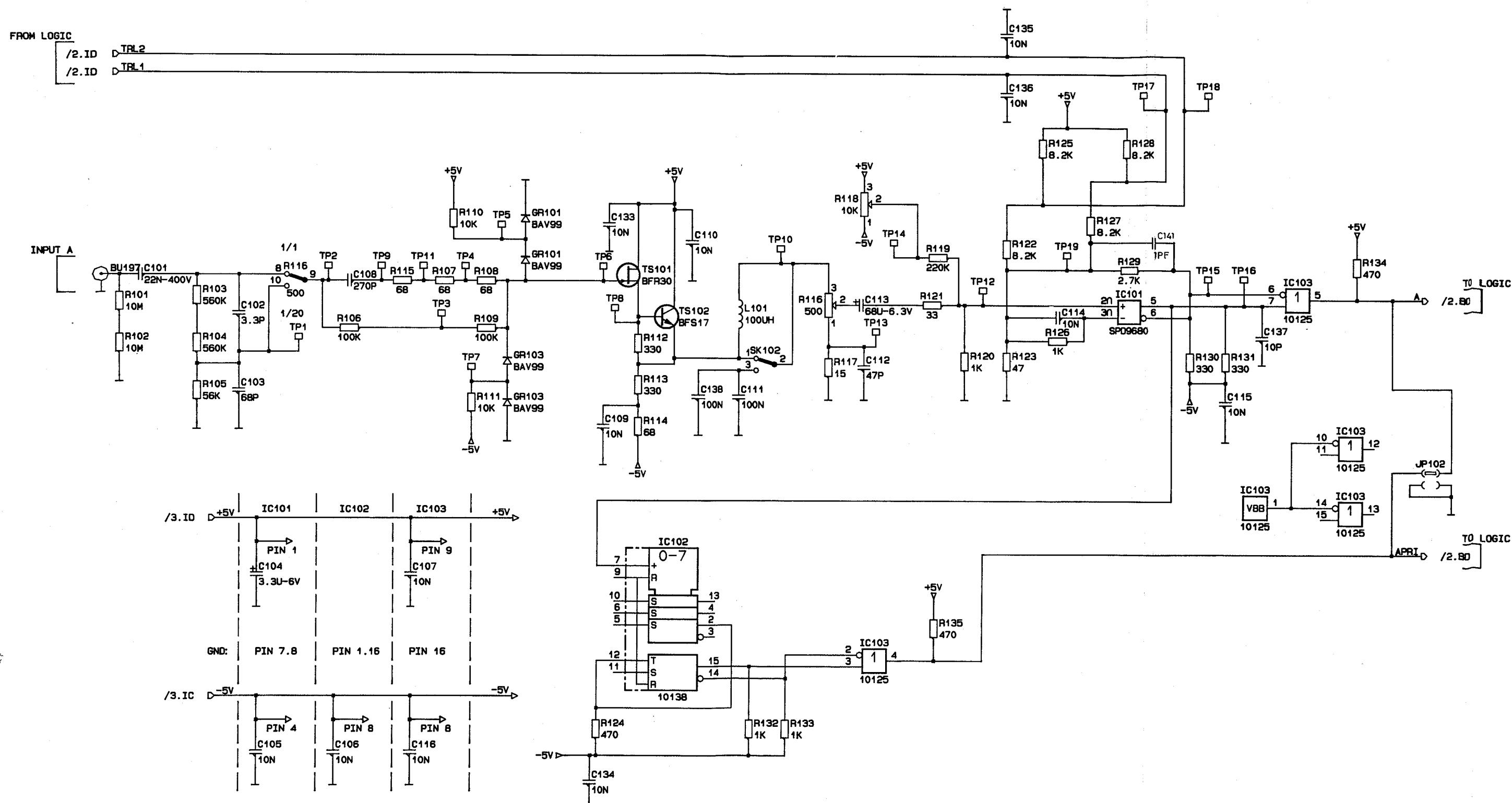


# NO FUNCTION IN PM6665

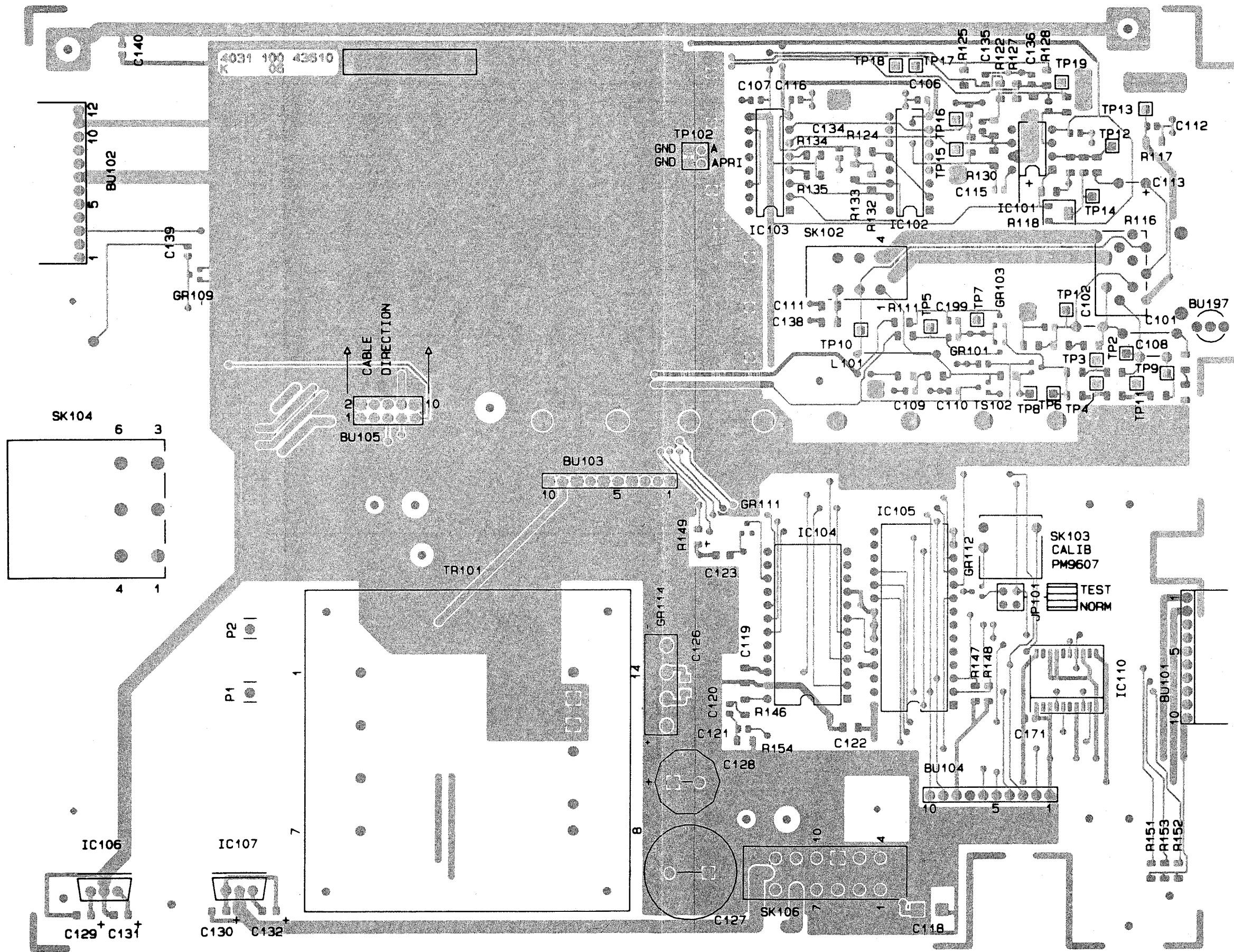
## PM 6669 Basic board



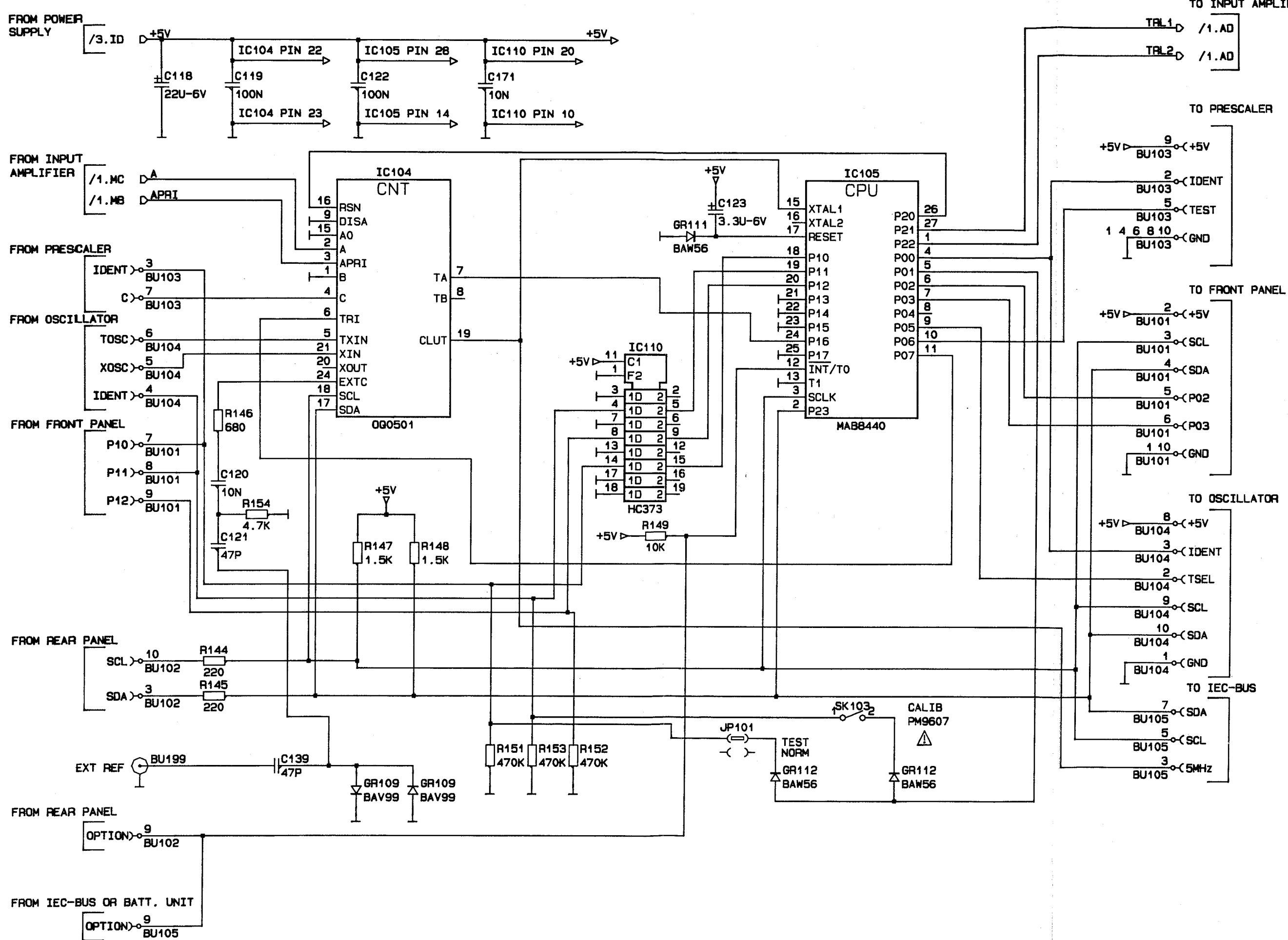
## **PM 6669 Basic board, input amplifier**



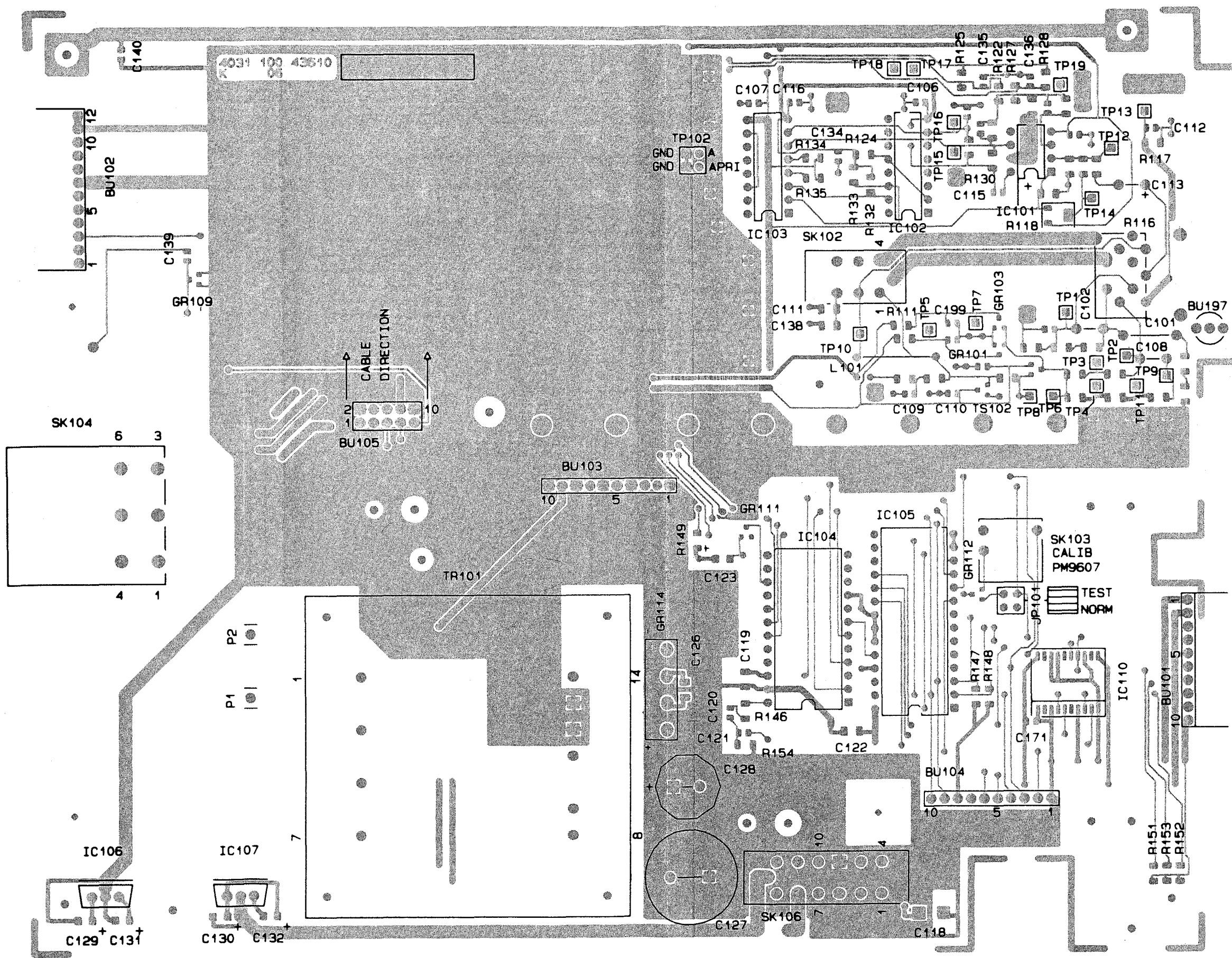
PM 6669 Basic board



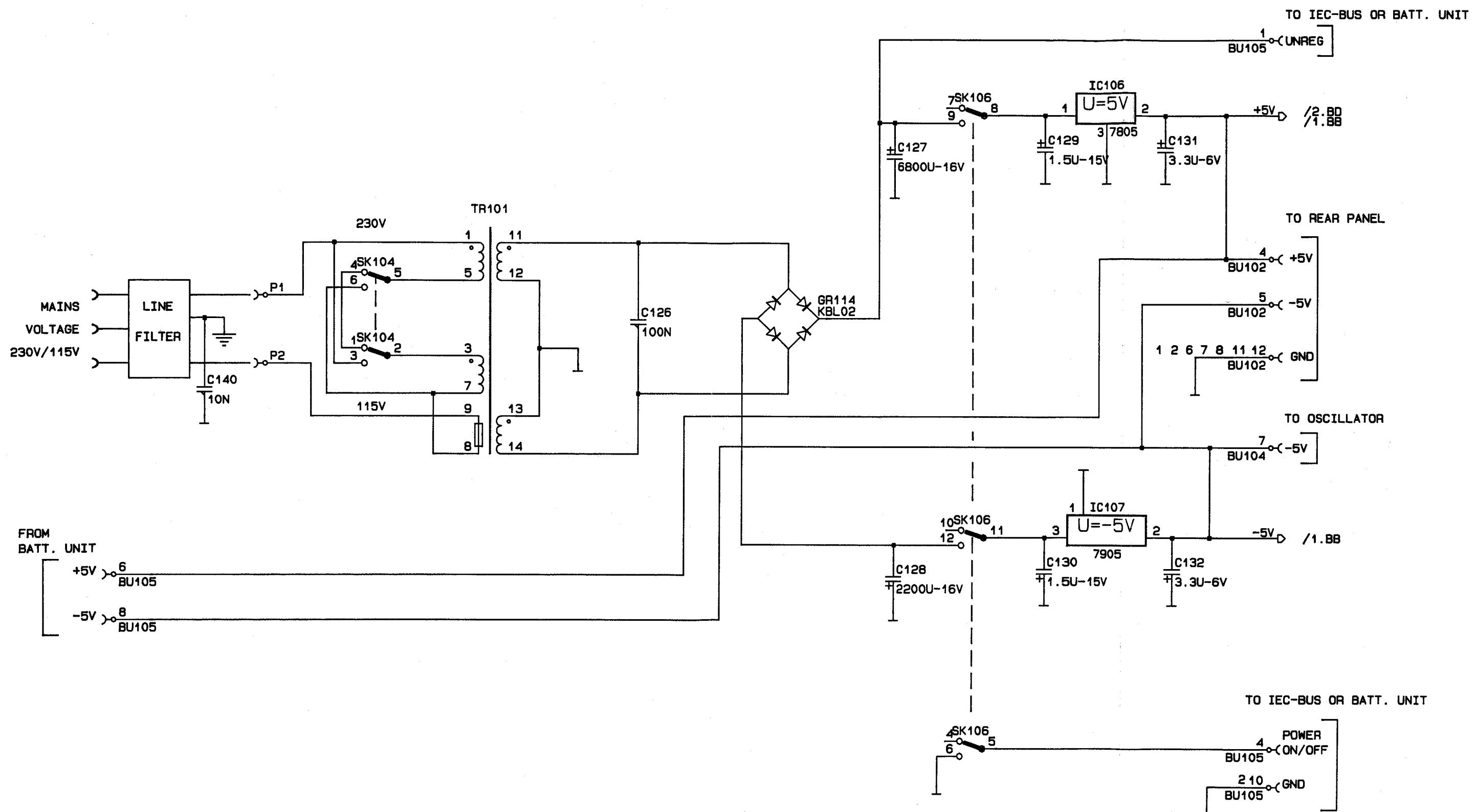
## PM 6669 Basic board, logic unit

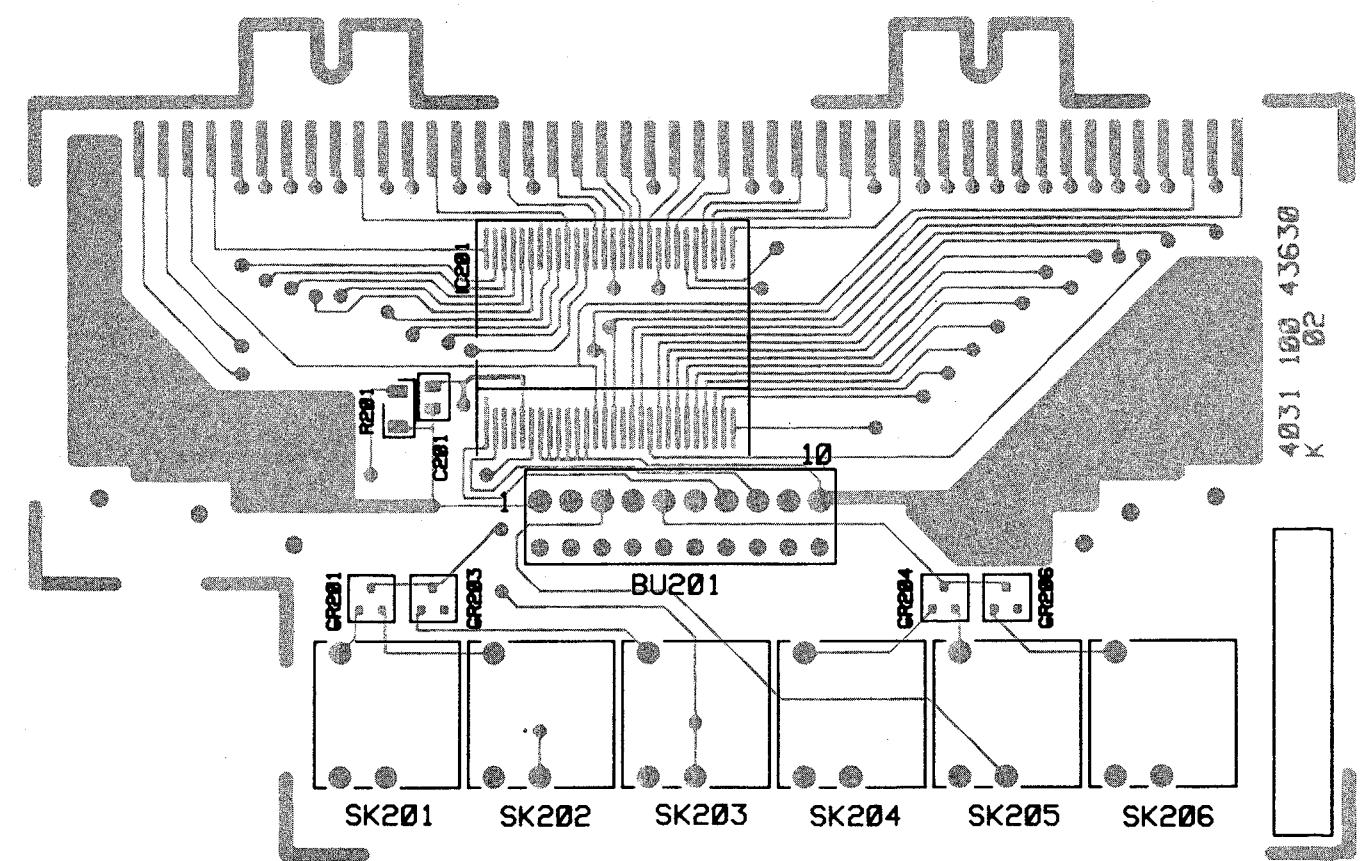


## PM 6669 Basic board

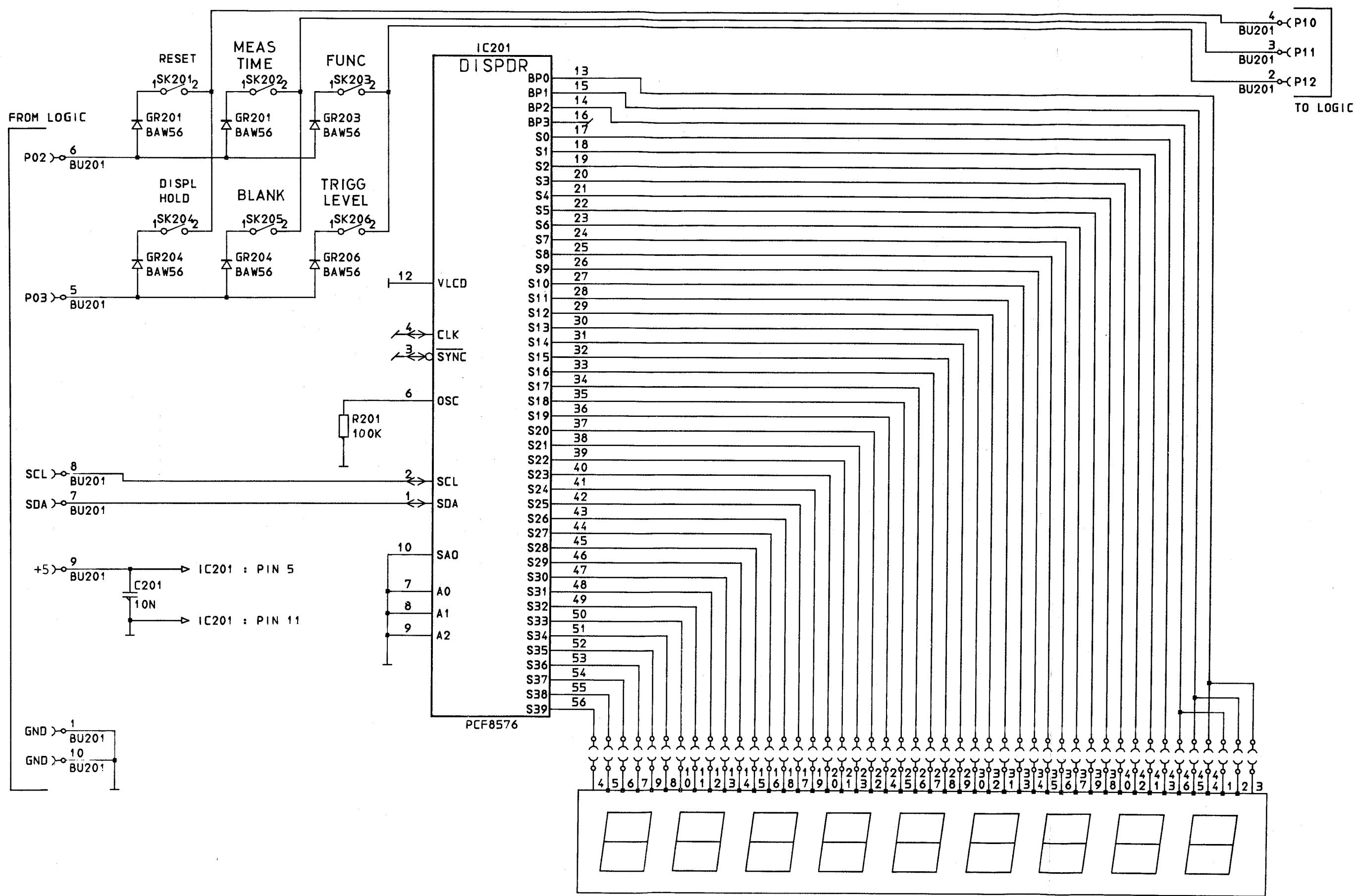


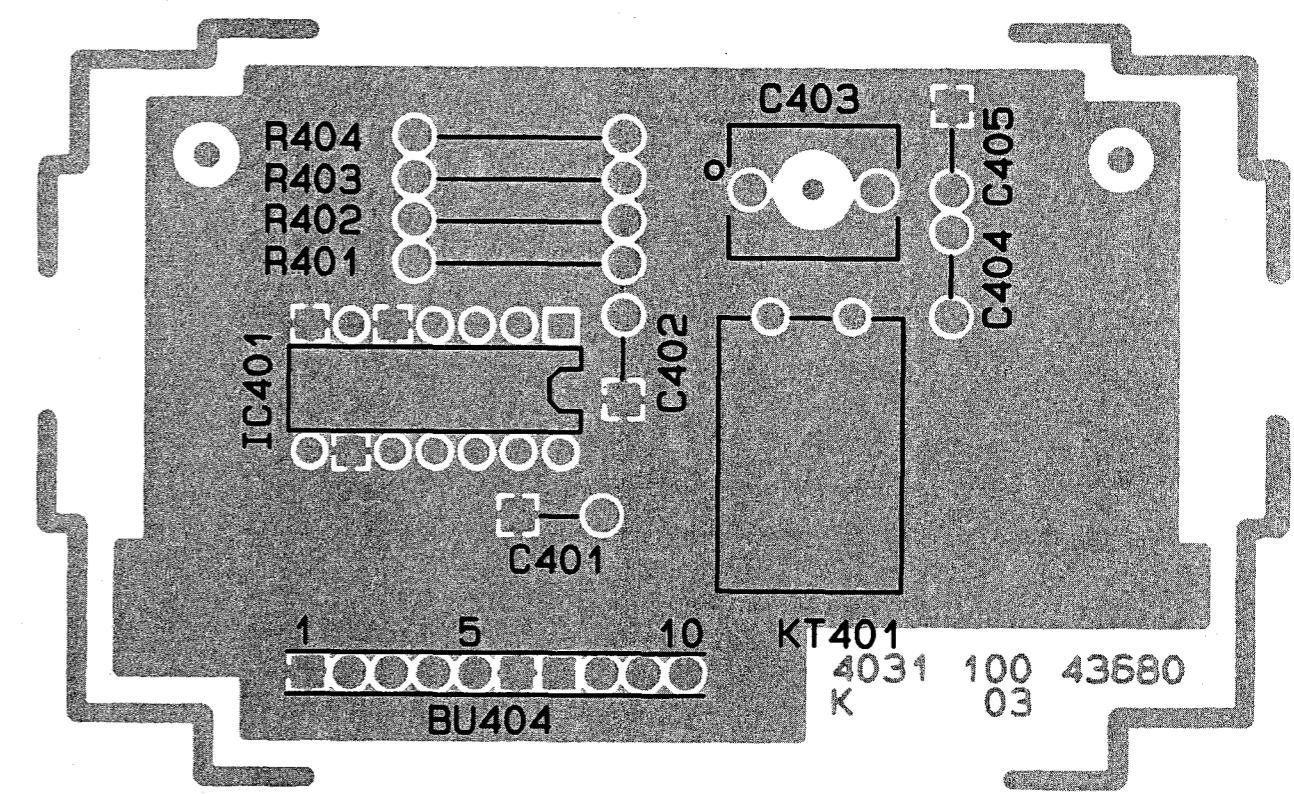
## PM 6669 Basic board, power supply



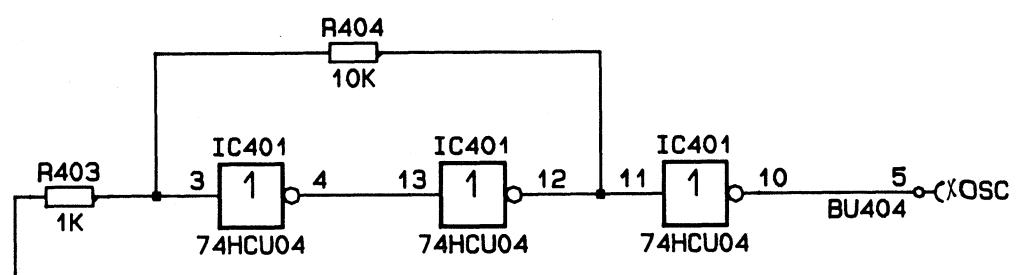
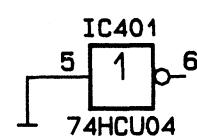
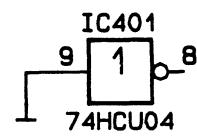
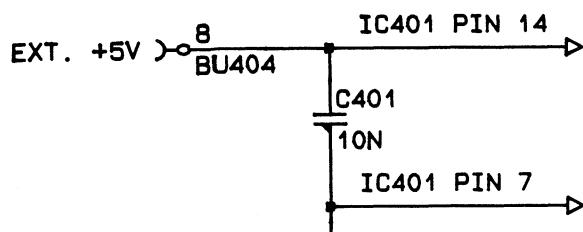
**PM 6669 Front panel**

PM 6669 Front panel



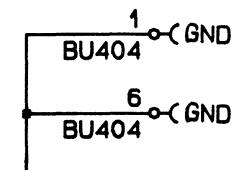
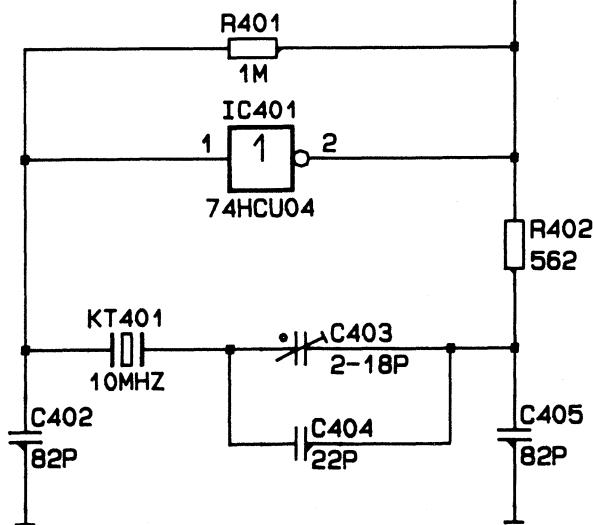
**.1. oscillator (uncompensated-crystal)**

## /1. oscillator (uncompensated-crystal)



3  
BU404

4  
BU404



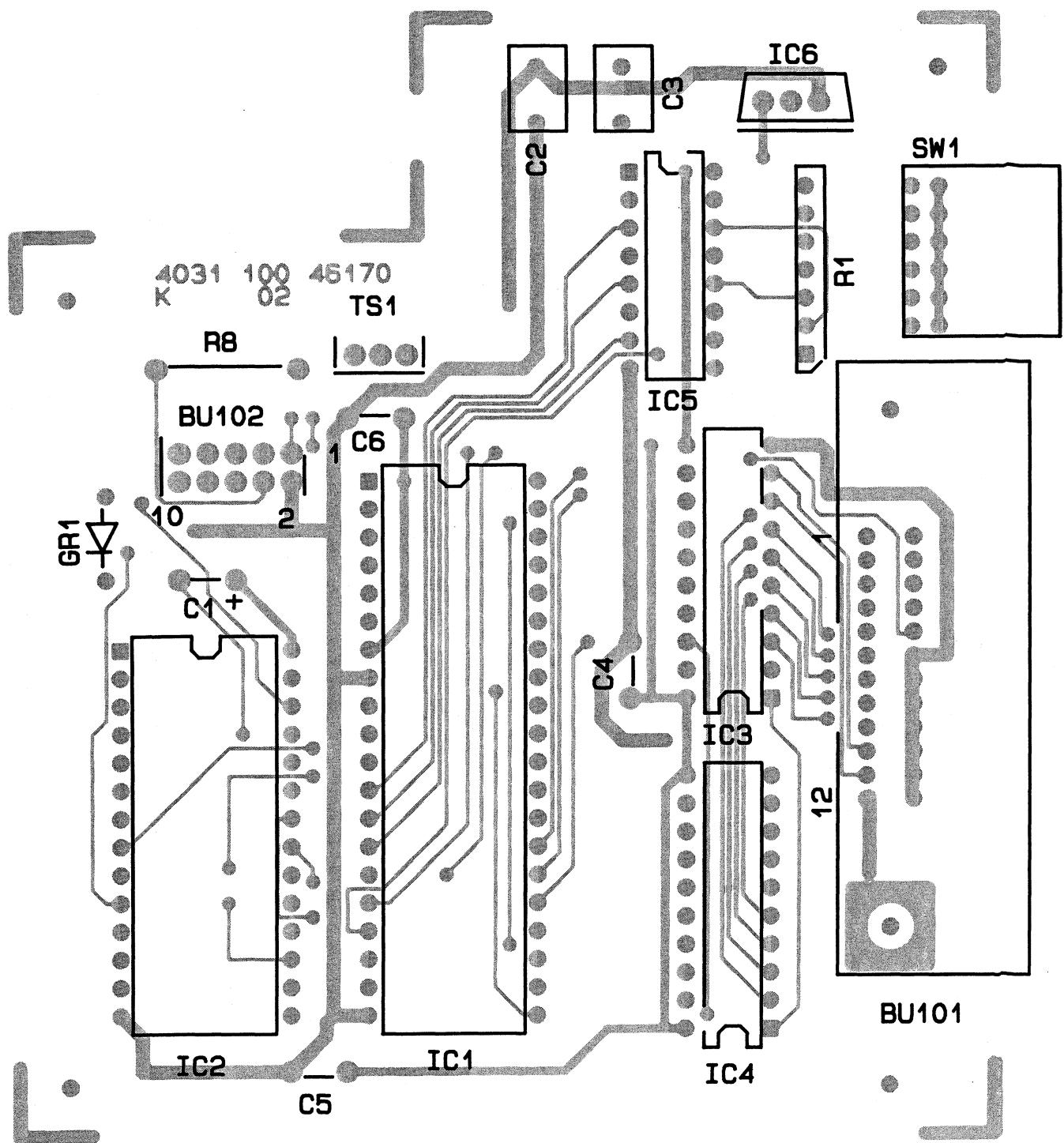
2  
BU404

7  
BU404

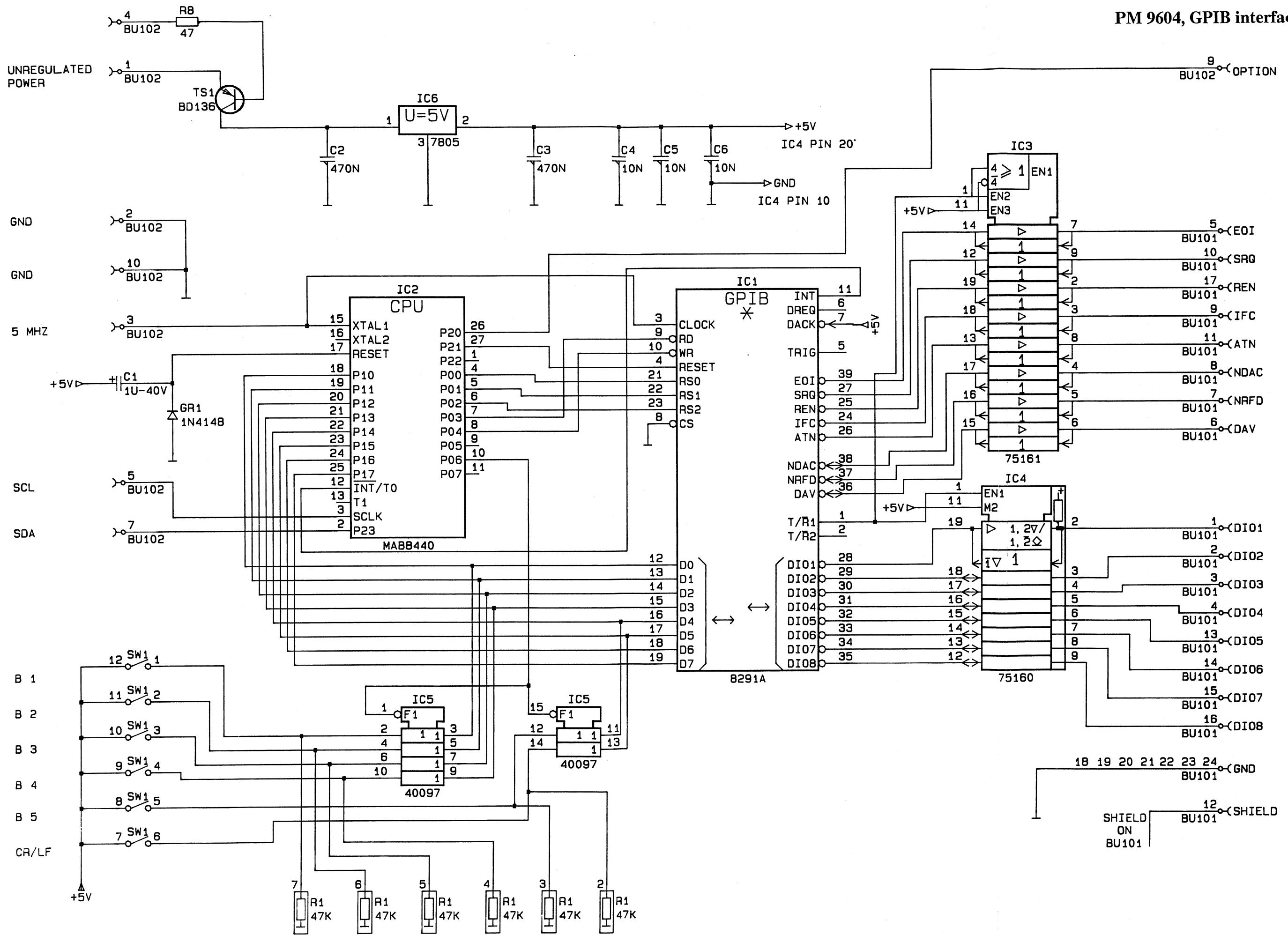
9  
BU404

10  
BU404

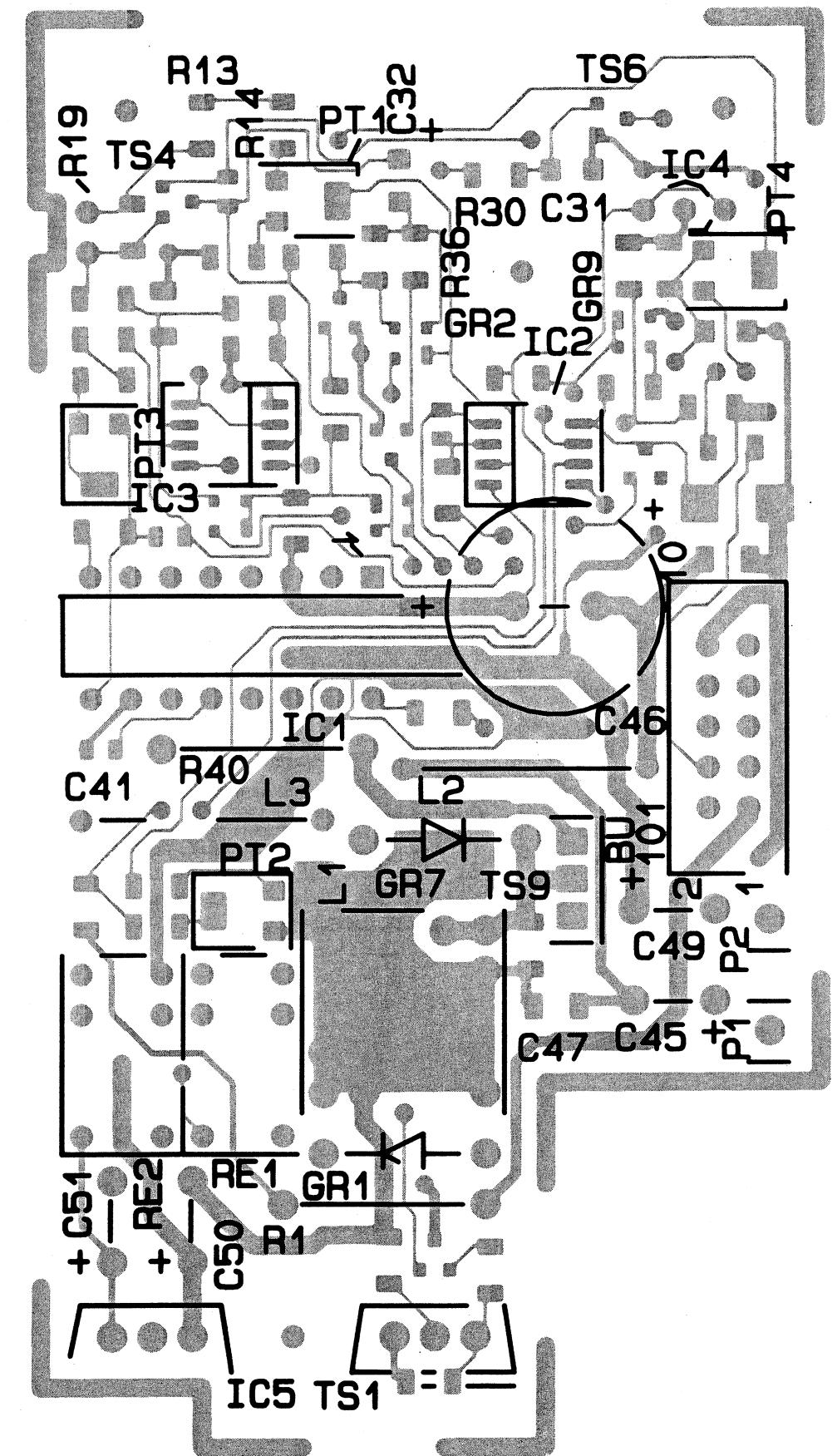
## PM 9604, GPIB interface



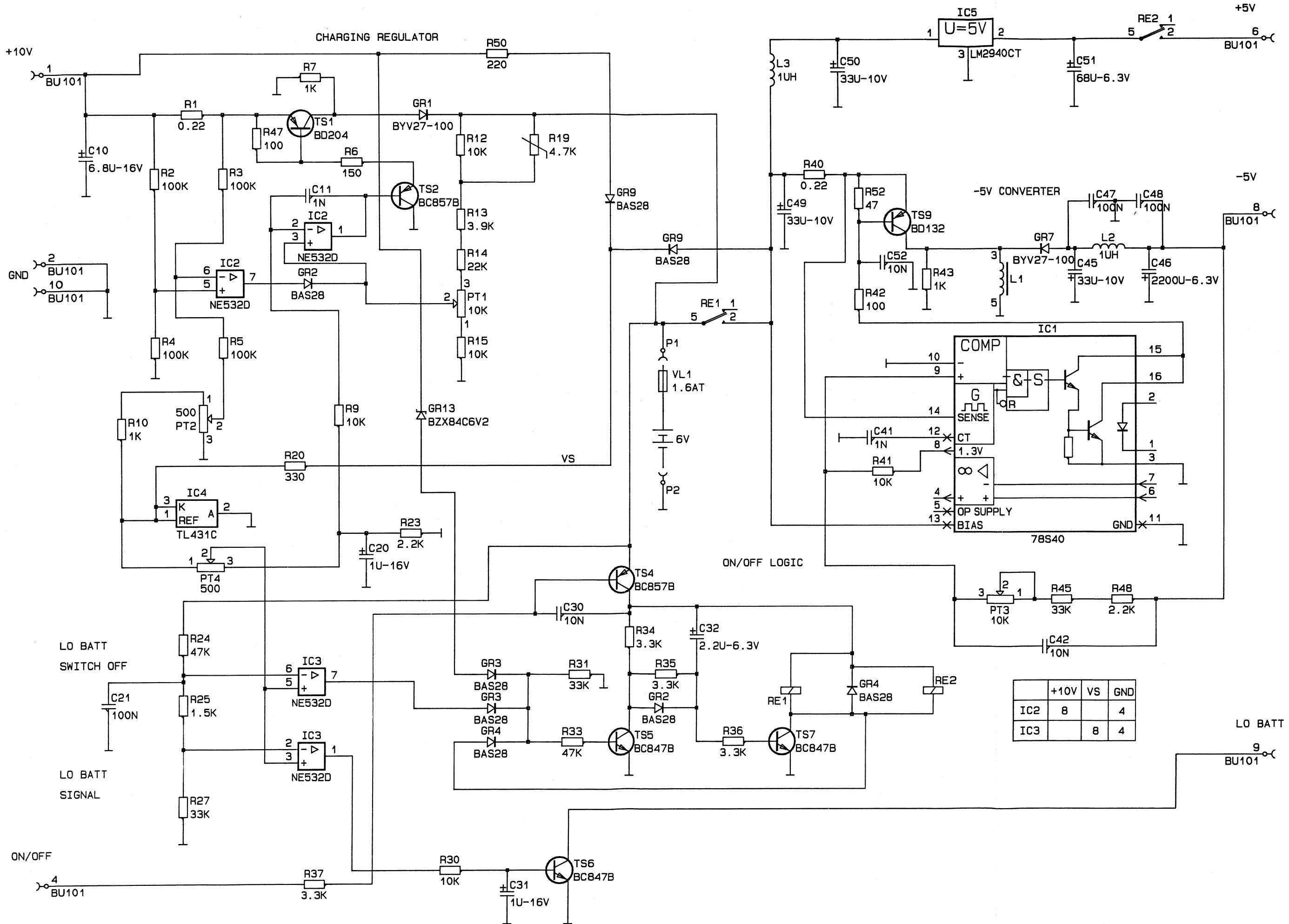
## PM 9604, GPIB interface



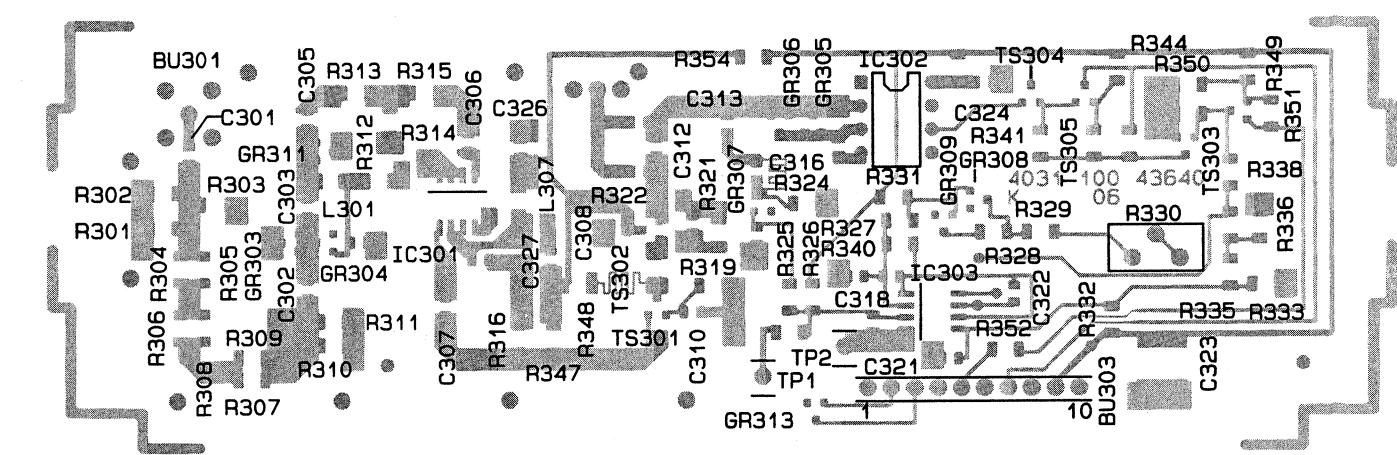
## PM 9605, Battery unit



## PM 9605, Battery unit

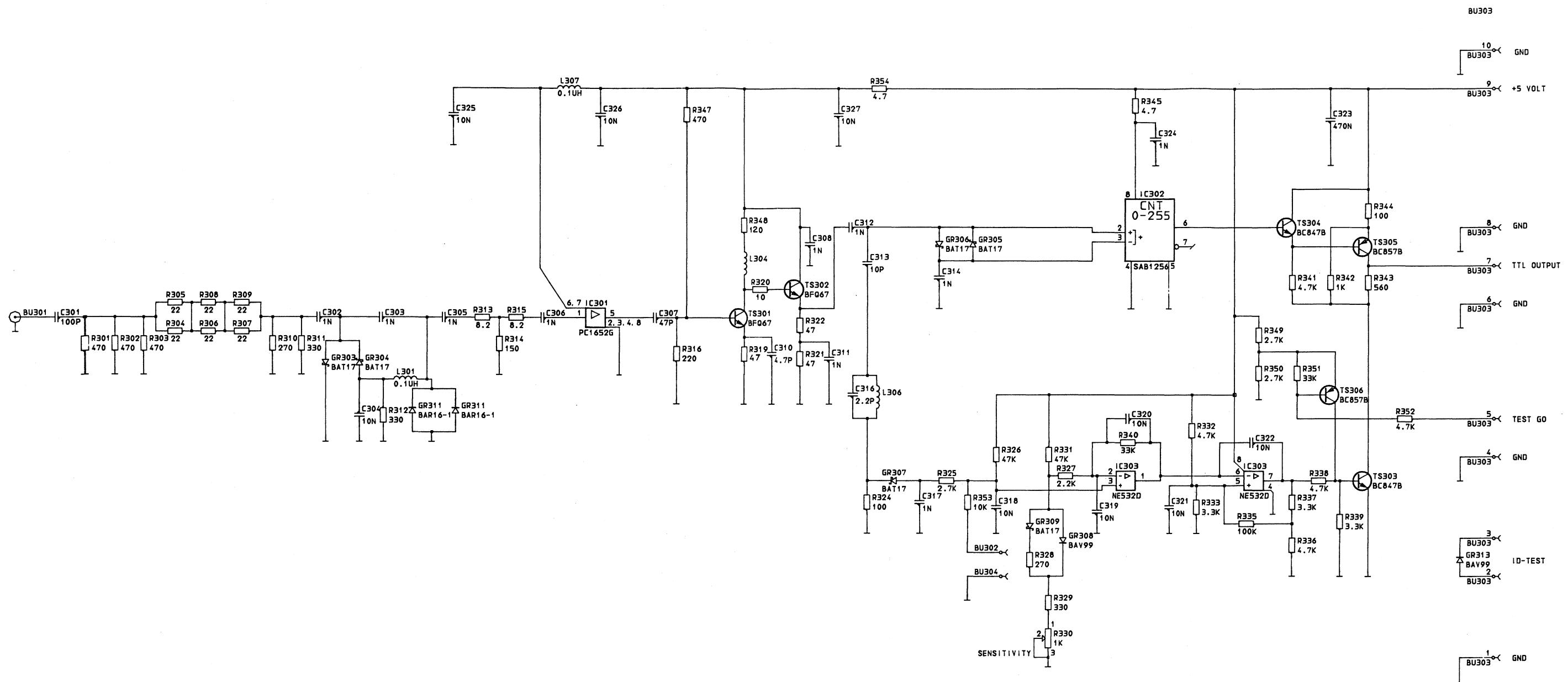


PM 9608, 1.1 GHz HF input



PM 9608, 1.1 GHz HF input

L304 AND L306 ARE PARTS OF THE PC





### **3. Spare parts list**

PM6665,-69

DATE: 87-05-12

SERVICECODE	DESCRIPTION	ARTICLE SPECIFICATION
-------------	-------------	-----------------------

## MECHANICAL PARTS

4822 526 10097	FXF TUBE	0.00	3B 4.3X2 L=7.2
5322 121 42352	MAINS FILTER	1.00	A FN326-1/07
5322 130 90413	DISPLAY	0.00	PM6665-69
5322 267 10004	CONNECTOR	0.00	KC-79-35
5322 267 70208	ZEBRA STRIP	0.00	S0.25P100.0L6.0H2.8W
5322 276 60257	PUSH SWITCH	6.00	CELL PM6665
5322 321 22314	CABLE ASSY	0.00	PM6665-69
5322 401 11102	TILTING SUPPOR	0.00	PM6665-69
5322 414 20034	PUSH BUTTON	0.00	SCHAD 6X10 L-BR/GN 30304
5322 414 30044	KNOB	10.00	MM BROWN SP=4 NO LINE
5322 414 70016	COVER	8.00	MM BROWN WH.LINE
5322 450 60633	WINDOW	0.00	FOR LCD 29X101.5
5322 462 41115	REAR FOOT	0.00	PM6665-69
5322 462 41116	BOTTOM FOOT	0.00	PM6665-69
5322 462 41117	RUBBER FOOT	0.00	PM6665-69 18X10X8
5322 498 10263	EXTENSION BAR	0.00	PM6665-69
5322 500 10385	SCREW	0.00	MRX 4X14 ST FZ

PM6665

DATE: 87-05-12

SERVICECODE	DESCRIPTION	ARTICLE SPECIFICATION			POS-NR
<b>BASIC BOARD, U1</b>					
5322 265 40379	CONNECTOR	5.00	POL	22-05-1059 3094-05F	BU101
5322 265 40634	CONNECTOR	12.00	POL	76382-312	BU102
5322 265 64028	CONNECTOR	10.00	POL	22-03-2101 4030-10A	BU103
5322 265 64028	CONNECTOR	10.00	POL	22-03-2101 4030-10A	BU104
5322 265 40197	CONNECTOR	10.00	POL	F095 DOUBLE ROW	BU105
5322 124 10652	CAPACITOR	22.00	UF	6V 195D226X0006F2	C101
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R 0805	C102
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R 0805	C103
5322 124 10652	CAPACITOR	22.00	UF	6V 195D226X0006F2	C106
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R 0805	C107
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R 0805	C108
4822 121 41677	CAPACITOR	10.00	NF	10% 400V 3X10 3M	C112
5322 125 50051	CAPACITOR	18.00	PF	2.0-18PF 300V	C113
5322 122 32448	CAPACITOR	10.00	PF	5% 50V NPO 0805	C116
5322 125 50049	CAPACITOR	10.00	PF	1,8-10PF 300V	C117
5322 124 10652	CAPACITOR	22.00	UF	6V 195D226X0006F2	C118
5322 122 34082	CAPACITOR	100.00	NF	20% 50V X7R 1808	C119
5322 122 32452	CAPACITOR	47.00	PF	5% 50V NPO 0805	C120
5322 122 32452	CAPACITOR	47.00	PF	5% 50V NPO 0805	C121
5322 122 34082	CAPACITOR	100.00	NF	20% 50V X7R 1808	C122
5322 124 10653	CAPACITOR	3.30	UF	6V 195D335X0006B2	C123
5322 122 34082	CAPACITOR	100.00	NF	20% 50V X7R 1808	C126
5322 124 41367	CAPACITOR	6800.00	UF	20% 16V ECEA1CU682	C127
5322 124 41366	CAPACITOR	2200.00	UF	20% 16V ECEA1CU222	C128
5322 124 10654	CAPACITOR	1.50	UF	15V 195D155X0015B2	C129
5322 124 10654	CAPACITOR	1.50	UF	15V 195D155X0015B2	C130
5322 124 10653	CAPACITOR	3.30	UF	6V 195D335X0006B2	C131
5322 124 10653	CAPACITOR	3.30	UF	6V 195D335X0006B2	C132
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R 0805	C134
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R 0805	C135
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R 0805	C136
5322 122 32269	CAPACITOR	68.00	PF	5% 50V NPO 0805	C137
5322 122 32532	CAPACITOR	100.00	PF	5% 50V NPO 0805	C138
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R 0805	C139
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R 0805	C140
5322 122 32268	CAPACITOR	470.00	PF	5% 50V NPO 0805	C141
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R 0805	C142
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R 0805	C143
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R 0805	C144
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R 0805	C145
5322 122 34082	CAPACITOR	100.00	NF	20% 50V X7R 1808	C146
5322 122 34123	CAPACITOR	1.00	NF	20% 50V X7R 0805	C147
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R 0805	C148
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R 0805	C149
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R 0805	C150
4822 121 41677	CAPACITOR	10.00	NF	10% 400V 3X10 3M	C153
5322 122 32448	CAPACITOR	10.00	PF	5% 50V NPO 0805	C154
5322 125 50051	CAPACITOR	18.00	PF	2.0-18PF 300V	C155
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R 0805	C157
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R 0805	C158
5322 125 50049	CAPACITOR	10.00	PF	1,8-10PF 300V	C159
5322 122 32269	CAPACITOR	68.00	PF	5% 50V NPO 0805	C160
5322 122 32532	CAPACITOR	100.00	PF	5% 50V NPO 0805	C161
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R 0805	C162
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R 0805	C163
5322 122 32268	CAPACITOR	470.00	PF	5% 50V NPO 0805	C164
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R 0805	C165
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R 0805	C166

PM6665

DATE: 87-05-12

SERVICECODE	DESCRIPTION	ARTICLE SPECIFICATION					POS-NR
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R	0805	C167	
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R	0805	C168	
5322 122 34082	CAPACITOR	100.00	NF	20% 50V X7R	1808	C169	
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R	0805	C170	
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R	0805	C171	
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R	0805	C172	
5322 122 32453	CAPACITOR	10.00	NF	20% 50V X7R	0805	C173	
5322 122 32448	CAPACITOR	10.00	PF	5% 50V NPO	0805	C174	
5322 122 32448	CAPACITOR	10.00	PF	5% 50V NPO	0805	C175	
5322 130 32739	DIODE	0.35	W	BZX84/C3V0	SOT23	GR101	
4822 130 32656	DIODE	0.10	A	BA483 35V	SOD-58	GR102	
4822 130 32656	DIODE	0.10	A	BA483 35V	SOD-58	GR103	
5322 130 32739	DIODE	0.35	W	BZX84/C3V0	SOT23	GR104	
5322 130 32739	DIODE	0.35	W	BZX84/C3V0	SOT23	GR105	
4822 130 32656	DIODE	0.10	A	BA483 35V	SOD-58	GR106	
4822 130 32656	DIODE	0.10	A	BA483 35V	SOD-58	GR107	
5322 130 32739	DIODE	0.35	W	BZX84/C3V0	SOT23	GR108	
5322 130 34337	DIODE	0.10	A	BAV99	SOT23	GR109	
5322 130 30691	DIODE	0.25	A	BAW56 70V	SOT23	GR111	
5322 130 30691	DIODE	0.25	A	BAW56 70V	SOT23	GR112	
4822 130 32003	BRIDGE RECTIF	4.00	A	KBL02 200V		GR114	
5322 130 30691	DIODE	0.25	A	BAW56 70V	SOT23	GR115	
5322 130 30691	DIODE	0.25	A	BAW56 70V	SOT23	GR117	
5322 209 83069	IC	0.00		TLC271CP	DIL-8	IC101	
5322 209 83069	IC	0.00		TLC271CP	DIL-8	IC102	
5322 209 71552	IC	0.00		AM687ADL		IC103	
5322 209 71559	LSI	0.00		DQ0501		IC104	
5322 255 40421	IC-SOCKET	24.00	POL	DIL		IC104	
5322 209 51236	IC-MICROP	0.00		PM6665-69 D2764		IC105	
5322 209 51241	IC-MICROP	0.00		PM6665-69 D2764		IC105	
5322 255 40234	IC-SOCKET	28.00	POL	DIL		IC105	
5322 209 84454	IC	5.00	V	MC7805CT 1A	TO-220	IC106	
5322 130 44843	IC	-5.00	V	MC7905CT 1A	TO-220	IC107	
5322 209 86203	IC	0.00		MC10138P		IC108	
5322 209 70313	IC	0.00		MC10125P		IC109	
5322 209 71555	IC	0.00		PC74HC373T	SO-20	IC110	
5322 265 60251	CONNECTOR	4.00	POL	F095 DOUBLE ROW		JP101	
5322 111 90094	RESISTOR	10.00	MOHM	10% 0.25W RC-01	1206	R101	
4822 111 90169	RESISTOR	560.00	KOHM	5% 0.25W RC-01	1206	R103	
4822 111 90169	RESISTOR	560.00	KOHM	5% 0.25W RC-01	1206	R104	
4822 111 90214	RESISTOR	100.00	KOHM	5% 0.25W RC-01	1206	R105	
4822 111 90169	RESISTOR	560.00	KOHM	5% 0.25W RC-01	1206	R106	
4822 111 90169	RESISTOR	560.00	KOHM	5% 0.25W RC-01	1206	R107	
4822 111 90573	RESISTOR	56.00	KOHM	5% 0.25W RC-01	1206	R108	
5322 111 90109	RESISTOR	470.00	OHM	5% 0.25W RC-01	1206	R109	
5322 111 90098	RESISTOR	150.00	OHM	5% 0.25W RC-01	1206	R110	
4822 111 90339	RESISTOR	120.00	OHM	5% 0.25W RC-01	1206	R111	
4822 111 90572	RESISTOR	5.60	KOHM	5% 0.25W RC-01	1206	R112	
4822 111 90169	RESISTOR	560.00	KOHM	5% 0.25W RC-01	1206	R113	
5322 111 90109	RESISTOR	470.00	OHM	5% 0.25W RC-01	1206	R114	
5322 111 90094	RESISTOR	10.00	MOHM	10% 0.25W RC-01	1206	R115	
4822 111 90214	RESISTOR	100.00	KOHM	5% 0.25W RC-01	1206	R116	
5322 101 20941	POTENTIOMETER	1.00	KOHM	PM6665		R117	
5322 111 90092	RESISTOR	1.00	KOHM	5% 0.25W RC-01	1206	R118	
5322 111 90092	RESISTOR	1.00	KOHM	5% 0.25W RC-01	1206	R119	
4822 111 90249	RESISTOR	10.00	KOHM	5% 0.25W RC-01	1206	R121	
4822 111 90214	RESISTOR	100.00	KOHM	5% 0.25W RC-01	1206	R122	
5322 111 90092	RESISTOR	1.00	KOHM	5% 0.25W RC-01	1206	R123	
5322 111 90096	RESISTOR	1.20	KOHM	5% 0.25W RC-01	1206	R125	
4822 111 90248	RESISTOR	2.20	KOHM	5% 0.25W RC-01	1206	R126	

PM6665

DATE: 87-05-12

SERVICECODE	DESCRIPTION	ARTICLE SPECIFICATION				POS-NR
4822 111 90214	RESISTOR	100.00	KOHM	5% 0.25W RC-01	1206	R127
4822 111 90157	RESISTOR	3.30	KOHM	5% 0.25W RC-01	1206	R128
5322 100 11143	POTENTIOMETER	10.00	KOHM	25% 0.1W 3304X-1-103		R129
5322 111 90267	RESISTOR	33.00	KOHM	5% 0.25W RC-01	1206	R130
5322 100 11144	POTENTIOMETER	500.00	OHM	25% 0.1W OPEN CERM		R131
5322 111 90106	RESISTOR	330.00	OHM	5% 0.25W RC-01	1206	R132
5322 111 90106	RESISTOR	330.00	OHM	5% 0.25W RC-01	1206	R133
5322 111 90109	RESISTOR	470.00	OHM	5% 0.25W RC-01	1206	R134
5322 111 90109	RESISTOR	470.00	OHM	5% 0.25W RC-01	1206	R135
5322 111 90092	RESISTOR	1.00	KOHM	5% 0.25W RC-01	1206	R136
5322 111 90092	RESISTOR	1.00	KOHM	5% 0.25W RC-01	1206	R137
5322 111 90109	RESISTOR	470.00	OHM	5% 0.25W RC-01	1206	R138
5322 111 90094	RESISTOR	10.00	MΩHM	10% 0.25W RC-01	1206	R139
4822 111 90169	RESISTOR	560.00	KOHM	5% 0.25W RC-01	1206	R141
4822 111 90169	RESISTOR	560.00	KOHM	5% 0.25W RC-01	1206	R142
4822 111 90573	RESISTOR	56.00	KOHM	5% 0.25W RC-01	1206	R143
4822 111 90178	RESISTOR	220.00	OHM	5% 0.25W RC-01	1206	R144
4822 111 90178	RESISTOR	220.00	OHM	5% 0.25W RC-01	1206	R145
5322 111 90111	RESISTOR	4.70	KOHM	5% 0.25W RC-01	1206	R146
4822 111 90151	RESISTOR	1.50	KOHM	5% 0.25W RC-01	1206	R147
4822 111 90151	RESISTOR	1.50	KOHM	5% 0.25W RC-01	1206	R148
4822 111 90249	RESISTOR	10.00	KOHM	5% 0.25W RC-01	1206	R149
4822 111 90161	RESISTOR	470.00	KOHM	5% 0.25W RC-01	1206	R151
4822 111 90161	RESISTOR	470.00	KOHM	5% 0.25W RC-01	1206	R152
4822 111 90161	RESISTOR	470.00	KOHM	5% 0.25W RC-01	1206	R153
4822 111 90162	RESISTOR	680.00	OHM	5% 0.25W RC-01	1206	R154
4822 111 90169	RESISTOR	560.00	KOHM	5% 0.25W RC-01	1206	R155
5322 111 90098	RESISTOR	150.00	OHM	5% 0.25W RC-01	1206	R156
4822 111 90339	RESISTOR	120.00	OHM	5% 0.25W RC-01	1206	R157
5322 111 90109	RESISTOR	470.00	OHM	5% 0.25W RC-01	1206	R158
4822 111 90214	RESISTOR	100.00	KOHM	5% 0.25W RC-01	1206	R159
4822 111 90169	RESISTOR	560.00	KOHM	5% 0.25W RC-01	1206	R160
4822 111 90214	RESISTOR	100.00	KOHM	5% 0.25W RC-01	1206	R161
5322 111 90092	RESISTOR	1.00	KOHM	5% 0.25W RC-01	1206	R162
5322 111 90092	RESISTOR	1.00	KOHM	5% 0.25W RC-01	1206	R164
5322 101 20941	POTENTIOMETER	1.00	KOHM	PM6665		R165
4822 111 90249	RESISTOR	10.00	KOHM	5% 0.25W RC-01	1206	R166
5322 111 90109	RESISTOR	470.00	OHM	5% 0.25W RC-01	1206	R167
4822 111 90572	RESISTOR	5.60	KOHM	5% 0.25W RC-01	1206	R168
5322 111 90094	RESISTOR	10.00	MΩHM	10% 0.25W RC-01	1206	R169
4822 111 90169	RESISTOR	560.00	KOHM	5% 0.25W RC-01	1206	R170
4822 111 90214	RESISTOR	100.00	KOHM	5% 0.25W RC-01	1206	R171
5322 111 90096	RESISTOR	1.20	KOHM	5% 0.25W RC-01	1206	R173
4822 111 90248	RESISTOR	2.20	KOHM	5% 0.25W RC-01	1206	R174
4822 111 90214	RESISTOR	100.00	KOHM	5% 0.25W RC-01	1206	R175
4822 111 90157	RESISTOR	3.30	KOHM	5% 0.25W RC-01	1206	R176
5322 100 11143	POTENTIOMETER	10.00	KOHM	25% 0.1W 3304X-1-103		R177
5322 111 90106	RESISTOR	330.00	OHM	5% 0.25W RC-01	1206	R178
5322 111 90106	RESISTOR	330.00	OHM	5% 0.25W RC-01	1206	R179
5322 111 90092	RESISTOR	1.00	KOHM	5% 0.25W RC-01	1206	R180
5322 111 90109	RESISTOR	470.00	OHM	5% 0.25W RC-01	1206	R181
4822 276 11076	KEY SWITCH	1.00	POL	DW-5112 TYPE VKS		SK103
5322 414 20031	PUSH BUTTON	0.00	VKS	6.5X6.5 L-BR 30304		SK103
5322 277 21124	VOLTAGE SWITCH	0.00		V202-12-MA-08-QA		SK104
5322 276 12192	PUSH SWITCH	1.00	CELL	PM6665-69		SK106
5322 146 21229	TRANSFORMER	0.00		PM6665-69		TR101
5322 130 44787	TRANSISTOR	0.00		BFR31 .01A 25V SOT23		TS101
5322 130 40781	TRANSISTOR	0.00		BFS17 .05A 15V SOT23		TS102
5322 130 44787	TRANSISTOR	0.00		BFR31 .01A 25V SOT23		TS103
5322 130 40781	TRANSISTOR	0.00		BFS17 .05A 15V SOT23		TS104

PM6665

DATE: 87-05-12

SERVICECODE	DESCRIPTION	ARTICLE SPECIFICATION	POS-NR
FRONT PANEL, U2			
5322 267 50336	CONNECTOR	10.00 POL	22-14-2104 4455-BC BU201
5322 122 32453	CAPACITOR	10.00 NF	20% 50V X7R 0805 C201
5322 130 30691	DIODE	0.25 A	BAW56 70V SOT23 GR201
5322 130 30691	DIODE	0.25 A	BAW56 70V SOT23 GR203
5322 130 30691	DIODE	0.25 A	BAW56 70V SOT23 GR204
5322 209 11129	IC	0.00	PCF8576T VS056 IC201
4822 111 90214	RESISTOR	100.00 KOHM	5% 0.25W RC-01 1206 R201
4822 276 11076	KEY SWITCH	1.00 POL	DW-5112 TYPE VKS SK201
5322 414 20031	PUSH BUTTON	0.00 VKS	6.5X6.5 L-BR 30304 SK201
4822 276 11076	KEY SWITCH	1.00 POL	DW-5112 TYPE VKS SK202
5322 414 20031	PUSH BUTTON	0.00 VKS	6.5X6.5 L-BR 30304 SK202
4822 276 11076	KEY SWITCH	1.00 POL	DW-5112 TYPE VKS SK203
5322 414 60146	PUSH BUTTON	0.00 VKS	6.5X6.5 BEIGE 40317 SK203
4822 276 11076	KEY SWITCH	1.00 POL	DW-5112 TYPE VKS SK204
5322 414 20031	PUSH BUTTON	0.00 VKS	6.5X6.5 L-BR 30304 SK204
4822 276 11076	KEY SWITCH	1.00 POL	DW-5112 TYPE VKS SK205
5322 414 20031	PUSH BUTTON	0.00 VKS	6.5X6.5 L-BR 30304 SK205

PM6669

DATE: 87-05-12

SERVICECODE	DESCRIPTION	ARTICLE SPECIFICATION	POS-NR
<b>BASIC BOARD, U1</b>			
5322 265 40379	CONNECTOR	5.00 POL	22-05-1059 3094-05F
5322 265 40634	CONNECTOR	12.00 POL	76382-312
5322 265 64028	CONNECTOR	10.00 POL	22-03-2101 4030-10A
5322 265 64028	CONNECTOR	10.00 POL	22-03-2101 4030-10A
5322 265 40197	CONNECTOR	10.00 POL	F095 DOUBLE ROW
5322 121 40308	CAPACITOR	22.00 NF	10% 400V
5322 122 32549	CAPACITOR	3.30 PF	+0-.25PF 500V NPO 2M
5322 122 32269	CAPACITOR	68.00 PF	5% 50V NPO 0805
5322 122 32453	CAPACITOR	10.00 NF	20% 50V X7R 0805
5322 122 32453	CAPACITOR	10.00 NF	20% 50V X7R 0805
5322 122 32453	CAPACITOR	10.00 NF	20% 50V X7R 0805
5322 122 32453	CAPACITOR	10.00 NF	20% 50V X7R 0805
5322 122 32452	CAPACITOR	270.00 PF	10% 500V 2M
5322 122 32453	CAPACITOR	10.00 NF	20% 50V X7R 0805
5322 122 32453	CAPACITOR	10.00 NF	20% 50V X7R 0805
5322 122 34082	CAPACITOR	100.00 NF	20% 50V X7R 1808
5322 122 32452	CAPACITOR	47.00 PF	5% 50V NPO 0805
5322 124 10455	CAPACITOR	68.00 UF	20% 6.3V SOLID AL
5322 122 32453	CAPACITOR	10.00 NF	20% 50V X7R 0805
5322 122 32453	CAPACITOR	10.00 NF	20% 50V X7R 0805
5322 122 32453	CAPACITOR	10.00 NF	20% 50V X7R 0805
5322 124 10652	CAPACITOR	22.00 UF	6V 195D226X0006F2
5322 122 34082	CAPACITOR	100.00 NF	20% 50V X7R 1808
5322 122 32453	CAPACITOR	10.00 NF	20% 50V X7R 0805
5322 122 32452	CAPACITOR	47.00 PF	5% 50V NPO 0805
5322 122 34082	CAPACITOR	100.00 NF	20% 50V X7R 1808
5322 124 10653	CAPACITOR	3.30 UF	6V 195D335X0006B2
5322 122 34082	CAPACITOR	100.00 NF	20% 50V X7R 1808
5322 124 41367	CAPACITOR	6800.00 UF	20% 16V ECEA1CU682
5322 124 41366	CAPACITOR	2200.00 UF	20% 16V ECEA1CU222
5322 124 10654	CAPACITOR	1.50 UF	15V 195D155X0015B2
5322 124 10654	CAPACITOR	1.50 UF	15V 195D155X0015B2
5322 124 10653	CAPACITOR	3.30 UF	6V 195D335X0006B2
5322 124 10653	CAPACITOR	3.30 UF	6V 195D335X0006B2
5322 122 32453	CAPACITOR	10.00 NF	20% 50V X7R 0805
5322 122 32453	CAPACITOR	10.00 NF	20% 50V X7R 0805
5322 122 32453	CAPACITOR	10.00 NF	20% 50V X7R 0805
5322 122 32453	CAPACITOR	10.00 NF	20% 50V X7R 0805
5322 122 32448	CAPACITOR	10.00 PF	5% 50V NPO 0805
5322 122 34082	CAPACITOR	100.00 NF	20% 50V X7R 1808
5322 122 32452	CAPACITOR	47.00 PF	5% 50V NPO 0805
5322 122 32453	CAPACITOR	10.00 NF	20% 50V X7R 0805
5322 122 32453	CAPACITOR	10.00 NF	20% 50V X7R 0805
5322 130 34337	DIODE	0.10 A	BAV99 SOT23 GR101
5322 130 34337	DIODE	0.10 A	BAV99 SOT23 GR103
5322 130 34337	DIODE	0.10 A	BAV99 SOT23 GR109
5322 130 30691	DIODE	0.25 A	BAW56 70V SOT23 GR111
5322 130 30691	DIODE	0.25 A	BAW56 70V SOT23 GR112
4822 130 32003	BRIDGE RECTIF	4.00 A	KBL02 200V GR114
5322 209 71556	IC	0.00	SP9680 DIL-8 IC101
5322 209 86203	IC	0.00	MC10138P IC102
5322 209 70313	IC	0.00	MC10125P IC103
5322 209 71559	LSI	0.00	OQ0501 IC104
5322 255 40421	IC-SOCKET	24.00 POL	DIL IC104
5322 209 51236	IC-MICROP	0.00	PM6665-69 D2764 IC105
5322 209 51241	IC-MICROP	0.00	PM6665-69 D2764 IC105
5322 255 40234	IC-SOCKET	28.00 POL	DIL IC105
5322 209 84454	IC	5.00 V	MC7805CT 1A TO-220 IC106

PM6669

DATE: 87-05-12

SERVICECODE	DESCRIPTION	ARTICLE SPECIFICATION	POS-NR
5322 130 44843	IC	-5.00 V	MC7905CT 1A TO-220 IC107
5322 209 71555	IC	0.00	PC74HC373T SO-20 IC110
5322 265 60251	CONNECTOR	4.00 POL	F095 DOUBLE ROW JP101
5322 263 50101	CONNECTOR	2.00 POL	F095 JUMPER GREY JP101
5322 265 44074	CONNECTOR	2.00 POL	F095 SINGLE ROW JP102
5322 158 10243	CHOKE	100.00 UH	10% Q=50 1641-104 L101
5322 111 90094	RESISTOR	10.00 MOHM	10% 0.25W RC-01 1206 R101
5322 111 90094	RESISTOR	10.00 MOHM	10% 0.25W RC-01 1206 R102
4822 111 90169	RESISTOR	560.00 KOHM	5% 0.25W RC-01 1206 R103
4822 111 90169	RESISTOR	560.00 KOHM	5% 0.25W RC-01 1206 R104
4822 111 90573	RESISTOR	56.00 KOHM	5% 0.25W RC-01 1206 R105
4822 111 90214	RESISTOR	100.00 KOHM	5% 0.25W RC-01 1206 R106
4822 111 90203	RESISTOR	68.00 OHM	5% 0.25W RC-01 1206 R107
4822 111 90203	RESISTOR	68.00 OHM	5% 0.25W RC-01 1206 R108
4822 111 90214	RESISTOR	100.00 KOHM	5% 0.25W RC-01 1206 R109
4822 111 90249	RESISTOR	10.00 KOHM	5% 0.25W RC-01 1206 R110
4822 111 90249	RESISTOR	10.00 KOHM	5% 0.25W RC-01 1206 R111
5322 111 90106	RESISTOR	330.00 OHM	5% 0.25W RC-01 1206 R112
5322 111 90106	RESISTOR	330.00 OHM	5% 0.25W RC-01 1206 R113
4822 111 90203	RESISTOR	68.00 OHM	5% 0.25W RC-01 1206 R114
4822 111 90203	RESISTOR	68.00 OHM	5% 0.25W RC-01 1206 R115
5322 101 20942	POTENTIOMETER	500.00 OHM	PM6669 R116
4822 111 90344	RESISTOR	15.00 OHM	5% 0.25W RC-01 1206 R117
5322 100 11143	POTENTIOMETER	10.00 KOHM	25% 0.1W 3304X-1-103 R118
4822 111 90197	RESISTOR	220.00 KOHM	5% 0.25W RC-01 1206 R119
5322 111 90092	RESISTOR	1.00 KOHM	5% 0.25W RC-01 1206 R120
4822 111 90357	RESISTOR	33.00 OHM	5% 0.25W RC-01 1206 R121
5322 111 90118	RESISTOR	8.20 KOHM	5% 0.25W RC-01 1206 R122
4822 111 90217	RESISTOR	47.00 OHM	5% 0.25W RC-01 1206 R123
5322 111 90109	RESISTOR	470.00 OHM	5% 0.25W RC-01 1206 R124
5322 111 90118	RESISTOR	8.20 KOHM	5% 0.25W RC-01 1206 R125
5322 111 90092	RESISTOR	1.00 KOHM	5% 0.25W RC-01 1206 R126
5322 111 90118	RESISTOR	8.20 KOHM	5% 0.25W RC-01 1206 R127
5322 111 90118	RESISTOR	8.20 KOHM	5% 0.25W RC-01 1206 R128
4822 111 90569	RESISTOR	2.70 KOHM	5% 0.25W RC-01 1206 R129
5322 111 90106	RESISTOR	330.00 OHM	5% 0.25W RC-01 1206 R130
5322 111 90106	RESISTOR	330.00 OHM	5% 0.25W RC-01 1206 R131
5322 111 90092	RESISTOR	1.00 KOHM	5% 0.25W RC-01 1206 R132
5322 111 90092	RESISTOR	1.00 KOHM	5% 0.25W RC-01 1206 R133
5322 111 90109	RESISTOR	470.00 OHM	5% 0.25W RC-01 1206 R134
5322 111 90109	RESISTOR	470.00 OHM	5% 0.25W RC-01 1206 R135
4822 111 90178	RESISTOR	220.00 OHM	5% 0.25W RC-01 1206 R144
4822 111 90178	RESISTOR	220.00 OHM	5% 0.25W RC-01 1206 R145
4822 111 90162	RESISTOR	680.00 OHM	5% 0.25W RC-01 1206 R146
4822 111 90151	RESISTOR	1.50 KOHM	5% 0.25W RC-01 1206 R147
4822 111 90151	RESISTOR	1.50 KOHM	5% 0.25W RC-01 1206 R148
4822 111 90249	RESISTOR	10.00 KOHM	5% 0.25W RC-01 1206 R149
4822 111 90161	RESISTOR	470.00 KOHM	5% 0.25W RC-01 1206 R151
4822 111 90161	RESISTOR	470.00 KOHM	5% 0.25W RC-01 1206 R152
4822 111 90161	RESISTOR	470.00 KOHM	5% 0.25W RC-01 1206 R153
5322 111 90111	RESISTOR	4.70 KOHM	5% 0.25W RC-01 1206 R154
5322 276 11447	PUSH SWITCH	1.00 CELL	PM6673-77 SK102
5322 414 20031	PUSH BUTTON	0.00 VKS	6.5X6.5 L-BR 30304 SK103
4822 276 11076	KEY SWITCH	1.00 POL	DW-5112 TYPE VKS SK103
5322 277 21124	VOLTAGE SWITCH	0.00	V202-12-MA-08-QA SK104
5322 276 12192	PUSH SWITCH	1.00 CELL	PM6665-69 SK106
5322 146 21229	TRANSFORMER	0.00	PM6665-69 TR101
5322 130 44343	TRANSISTOR	0.00	BFR30 .01A 25V SOT23 TS101
5322 130 40781	TRANSISTOR	0.00	BFS17 .05A 15V SOT23 TS102

PM6669

DATE: 87-05-12

SERVICECODE	DESCRIPTION	ARTICLE SPECIFICATION	POS-NR
FRONT PANEL, U2			
5322 267 50336	CONNECTOR	10.00 POL	22-14-2104 4455-BC BU201
5322 122 32453	CAPACITOR	10.00 NF	20% 50V X7R 0805 C201
5322 130 30691	DIODE	0.25 A	BAW56 70V SOT23 GR201
5322 130 30691	DIODE	0.25 A	BAW56 70V SOT23 GR203
5322 130 30691	DIODE	0.25 A	BAW56 70V SOT23 GR204
5322 130 30691	DIODE	0.25 A	BAW56 70V SOT23 GR205
5322 209 11129	IC	0.00	PCF8576T VS056 IC201
4822 111 90214	RESISTOR	100.00 KOHM	5% 0.25W RC-01 1206 R201
5322 414 20031	PUSH BUTTON	0.00 VKS	6.5X6.5 L-BR 30304 SK201
4822 276 11076	KEY SWITCH	1.00 POL	DW-5112 TYPE VKS SK201
5322 414 20031	PUSH BUTTON	0.00 VKS	6.5X6.5 L-BR 30304 SK202
4822 276 11076	KEY SWITCH	1.00 POL	DW-5112 TYPE VKS SK202
5322 414 60146	PUSH BUTTON	0.00 VKS	6.5X6.5 BEIGE 40317 SK203
4822 276 11076	KEY SWITCH	1.00 POL	DW-5112 TYPE VKS SK203
5322 414 20031	PUSH BUTTON	0.00 VKS	6.5X6.5 L-BR 30304 SK204
4822 276 11076	KEY SWITCH	1.00 POL	DW-5112 TYPE VKS SK204
5322 414 20031	PUSH BUTTON	0.00 VKS	6.5X6.5 L-BR 30304 SK205
4822 276 11076	KEY SWITCH	1.00 POL	DW-5112 TYPE VKS SK205
5322 414 20031	PUSH BUTTON	0.00 VKS	6.5X6.5 L-BR 30304 SK206
4822 276 11076	KEY SWITCH	1.00 POL	DW-5112 TYPE VKS SK206

PM6665,-69

DATE: 87-05-12

SERVICECODE	DESCRIPTION	ARTICLE SPECIFICATION	POS-NR
<b>X-TAL OSCILLATOR, U4</b>			
5322 267 54195	CONNECTOR	10.00 PDL	22-15-2106 4455-AC
4822 122 31414	CAPACITOR	10.00 NF	-20/+50% 100V 2M
4822 122 31237	CAPACITOR	82.00 PF	2% 100V NPO 2M
5322 125 54029	CAPACITOR	18.00 PF	2-18PF 300V
4822 122 31063	CAPACITOR	22.00 PF	2% 100V NPO 2M
4822 122 31237	CAPACITOR	82.00 PF	2% 100V NPO 2M
5322 209 11455	IC	0.00	MM74HCU04N
5322 242 74163	CRYSTAL	10.00 MHZ	PM9677 HC-49U
5322 116 55535	RESISTOR	1.00 MOHM	1% 0.4W MR25
5322 116 55274	RESISTOR	215.00 OHM	1% 0.4W MR25
4822 116 53108	RESISTOR	1.00 KOHM	1% 0.5W MRS25
4822 116 53022	RESISTOR	10.00 KOHM	1% 0.5W MRS25

### /3. oscillator (MTCXO)

Repair of this oscillator cannot be carried out by the local service organization so no spare parts are available. The complete oscillator unit must be sent to the factory for repair.

Contact your local Philips organization.

PM9604 GPIB

DATE: 87-05-11

SERVICECODE	DESCRIPTION	ARTICLE SPECIFICATION			POS-NR
5322 267 60148	CONNECTOR	24.00	POL	57LE-20240-7700D35G	BU101
5322 321 22315	CABLE ASSY			PM9604	BU102
5322 124 14075	CAPACITOR	1.00	UF	20% 40V (25V) SOL AL	C1
5322 121 42525	CAPACITOR	470.00	NF	10% 63V MMKO-5 PETP	C2
5322 121 42525	CAPACITOR	470.00	NF	10% 63V MMKO-5 PETP	C3
4822 122 31414	CAPACITOR	10.00	NF	-20/+50% 100V 2M	C4
4822 122 31414	CAPACITOR	10.00	NF	-20/+50% 100V 2M	C5
4822 122 31414	CAPACITOR	10.00	NF	-20/+50% 100V 2M	C6
4822 130 30621	DIODE	0.20	A	1N4148/75 DO-35	GR1
5322 255 40233	IC-SOCKET	40.00	POL	DIL	IC1
5322 209 81264	IC			P8291A TALK/LISTEN	IC1
5322 209 51242	IC			PM9604 D2764	IC2
5322 255 40234	IC-SOCKET	28.00	POL	DIL	IC2
5322 209 71577	IC			MABB400B DIL-28	IC2
5322 209 81842	IC			SN75161AN	IC3
5322 209 81807	IC			SN75160AN	IC4
4822 209 10317	IC			HEF40097BP	IC5
5322 209 84454	IC	5.00	V	MC7805CT 1A TO-220	IC6
5322 111 94031	RES. NETWORK	47.00	KOHM	10%x6 1/8W	R1
5322 116 53232	RESISTOR	464.00	OHM	1% 0.5W MRS25	R8
5322 277 21125	DIP SWITCH	6.00	POL	206-6 RAST	SW1
4822 130 40824	TRANSISTOR			BD136 1.5A 45V TO-126	TS1

## PM9608 PRESCALER

DATE: 87-05-11

SERVICECODE	DESCRIPTION	ARTICLE SPECIFICATION	POS-NR
5322 321 22313	CABLE ASSY	0.00	PM9608 PRESCAL
5322 267 60199	CONNECTOR	0.00	R 114426 SMB
5322 290 30191	SOLDERING PIN	2.80 MM	E242.5 SN
5322 267 54195	CONNECTOR	10.00 POL	22-15-2106 4455-AC
5322 290 30191	SOLDERING PIN	2.80 MM	E242.5 SN
5322 122 32532	CAPACITOR	100.00 PF	5% 50V NPO 0805
5322 122 34123	CAPACITOR	1.00 NF	20% 50V X7R 0805
5322 122 34123	CAPACITOR	1.00 NF	20% 50V X7R 0805
5322 122 32453	CAPACITOR	10.00 NF	20% 50V X7R 0805
5322 122 34123	CAPACITOR	1.00 NF	20% 50V X7R 0805
5322 122 34123	CAPACITOR	1.00 NF	20% 50V X7R 0805
5322 122 32452	CAPACITOR	47.00 PF	5% 50V NPO 0805
5322 122 34123	CAPACITOR	1.00 NF	20% 50V X7R 0805
5322 122 32451	CAPACITOR	4.70 PF	5% 50V NPO 0805
5322 122 34123	CAPACITOR	1.00 NF	20% 50V X7R 0805
5322 122 34123	CAPACITOR	1.00 NF	20% 50V X7R 0805
5322 122 32448	CAPACITOR	10.00 PF	5% 50V NPO 0805
5322 122 34123	CAPACITOR	1.00 NF	20% 50V X7R 0805
5322 122 33063	CAPACITOR	2.20 PF	5% 50V NPO 0805
5322 122 34123	CAPACITOR	1.00 NF	20% 50V X7R 0805
5322 122 32453	CAPACITOR	10.00 NF	20% 50V X7R 0805
5322 122 32453	CAPACITOR	10.00 NF	20% 50V X7R 0805
5322 122 32453	CAPACITOR	10.00 NF	20% 50V X7R 0805
5322 122 32453	CAPACITOR	10.00 NF	20% 50V X7R 0805
5322 122 32446	CAPACITOR	470.00 NF	20% 50V X7R 2220
5322 122 34123	CAPACITOR	1.00 NF	20% 50V X7R 0805
5322 122 32453	CAPACITOR	10.00 NF	20% 50V X7R 0805
5322 122 32453	CAPACITOR	10.00 NF	20% 50V X7R 0805
5322 122 32453	CAPACITOR	10.00 NF	20% 50V X7R 0805
5322 130 31544	DIODE	0.03 A	BAT17 SOT23 GR303
5322 130 31544	DIODE	0.03 A	BAT17 SOT23 GR304
5322 130 31544	DIODE	0.03 A	BAT17 SOT23 GR305
5322 130 31544	DIODE	0.03 A	BAT17 SOT23 GR306
5322 130 31544	DIODE	0.03 A	BAT17 SOT23 GR307
5322 130 34337	DIODE	0.10 A	BAV99 SOT23 GR308
5322 130 31544	DIODE	0.03 A	BAT17 SOT23 GR309
5322 130 80246	DIODE	0.00	BAR 16-1 SOT23 GR311
5322 130 34337	DIODE	0.10 A	BAV99 SOT23 GR313
5322 209 71557	IC	1.20 GHZ	UPC1652G SO-8 VAR IC301
5322 209 71554	IC	1.00 GHZ	SAB1256P /256 DIL-8 IC302
5322 209 71553	IC	0.00	NE532D DUAL SO-8 IC303
5322 157 52689	CHOKE	0.10 UH	10% MLF3216DR10K L301
5322 157 52689	CHOKE	0.10 UH	10% MLF3216DR10K L307
5322 111 90109	RESISTOR	470.00 OHM	5% 0.25W RC-01 1206 R301
5322 111 90109	RESISTOR	470.00 OHM	5% 0.25W RC-01 1206 R302
5322 111 90109	RESISTOR	470.00 OHM	5% 0.25W RC-01 1206 R303
4822 111 90186	RESISTOR	22.00 OHM	5% 0.25W RC-01 1206 R304
4822 111 90186	RESISTOR	22.00 OHM	5% 0.25W RC-01 1206 R305
4822 111 90186	RESISTOR	22.00 OHM	5% 0.25W RC-01 1206 R306
4822 111 90186	RESISTOR	22.00 OHM	5% 0.25W RC-01 1206 R307
4822 111 90186	RESISTOR	22.00 OHM	5% 0.25W RC-01 1206 R308
4822 111 90186	RESISTOR	22.00 OHM	5% 0.25W RC-01 1206 R309
4822 111 90154	RESISTOR	270.00 OHM	5% 0.25W RC-01 1206 R310
5322 111 90106	RESISTOR	330.00 OHM	5% 0.25W RC-01 1206 R311
5322 111 90106	RESISTOR	330.00 OHM	5% 0.25W RC-01 1206 R312
4822 111 90397	RESISTOR	8.20 OHM	10% 0.25W RC-01 1206 R313
5322 111 90098	RESISTOR	150.00 OHM	5% 0.25W RC-01 1206 R314
4822 111 90397	RESISTOR	8.20 OHM	10% 0.25W RC-01 1206 R315
4822 111 90178	RESISTOR	220.00 OHM	5% 0.25W RC-01 1206 R316

PM9608 PRESCALER

DATE: 87-05-11

SERVICECODE	DESCRIPTION	ARTICLE	SPECIFICATION	POS-NR
4822 111 90217	RESISTOR	47.00 OHM	5% 0.25W RC-01	1206 R319
5322 111 90095	RESISTOR	10.00 OHM	5% 0.25W RC-01	1206 R320
4822 111 90217	RESISTOR	47.00 OHM	5% 0.25W RC-01	1206 R321
4822 111 90217	RESISTOR	47.00 OHM	5% 0.25W RC-01	1206 R322
5322 111 90091	RESISTOR	100.00 OHM	5% 0.25W RC-01	1206 R324
4822 111 90569	RESISTOR	2.70 KOHM	5% 0.25W RC-01	1206 R325
4822 111 90543	RESISTOR	47.00 KOHM	5% 0.25W RC-01	1206 R326
4822 111 90248	RESISTOR	2.20 KOHM	5% 0.25W RC-01	1206 R327
4822 111 90154	RESISTOR	270.00 OHM	5% 0.25W RC-01	1206 R328
5322 111 90106	RESISTOR	330.00 OHM	5% 0.25W RC-01	1206 R329
5322 101 14299	POTENTIOMETER	1.00 KOHM	10% 72X	R330
4822 111 90543	RESISTOR	47.00 KOHM	5% 0.25W RC-01	1206 R331
5322 111 90111	RESISTOR	4.70 KOHM	5% 0.25W RC-01	1206 R332
4822 111 90157	RESISTOR	3.30 KOHM	5% 0.25W RC-01	1206 R333
4822 111 90214	RESISTOR	100.00 KOHM	5% 0.25W RC-01	1206 R335
5322 111 90111	RESISTOR	4.70 KOHM	5% 0.25W RC-01	1206 R336
4822 111 90157	RESISTOR	3.30 KOHM	5% 0.25W RC-01	1206 R337
5322 111 90111	RESISTOR	4.70 KOHM	5% 0.25W RC-01	1206 R338
4822 111 90157	RESISTOR	3.30 KOHM	5% 0.25W RC-01	1206 R339
5322 111 90267	RESISTOR	33.00 KOHM	5% 0.25W RC-01	1206 R340
5322 111 90111	RESISTOR	4.70 KOHM	5% 0.25W RC-01	1206 R341
5322 111 90092	RESISTOR	1.00 KOHM	5% 0.25W RC-01	1206 R342
5322 111 90113	RESISTOR	560.00 OHM	5% 0.25W RC-01	1206 R343
5322 111 90091	RESISTOR	100.00 OHM	5% 0.25W RC-01	1206 R344
5322 111 90376	RESISTOR	4.70 OHM	10% 0.25W RC-01	1206 R345
5322 111 90109	RESISTOR	470.00 OHM	5% 0.25W RC-01	1206 R347
4822 111 90339	RESISTOR	120.00 OHM	5% 0.25W RC-01	1206 R348
4822 111 90569	RESISTOR	2.70 KOHM	5% 0.25W RC-01	1206 R349
4822 111 90569	RESISTOR	2.70 KOHM	5% 0.25W RC-01	1206 R350
5322 111 90267	RESISTOR	33.00 KOHM	5% 0.25W RC-01	1206 R351
5322 111 90111	RESISTOR	4.70 KOHM	5% 0.25W RC-01	1206 R352
4822 111 90249	RESISTOR	10.00 KOHM	5% 0.25W RC-01	1206 R353
5322 111 90376	RESISTOR	4.70 OHM	10% 0.25W RC-01	1206 R354
5322 130 42567	TRANSISTOR	0.00	BFQ67	SOT23 TS301
5322 130 42567	TRANSISTOR	0.00	BFQ67	SOT23 TS302
4822 130 60511	TRANSISTOR	0.00	BC847B .1A45V	SOT23 TS303
4822 130 60511	TRANSISTOR	0.00	BC847B .1A45V	SOT23 TS304
5322 130 60508	TRANSISTOR	0.00	BC857B .1A45V	SOT23 TS305
5322 130 60508	TRANSISTOR	0.00	BC857B .1A45V	SOT23 TS306

